

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—17TH YEAR.

SYDNEY, SATURDAY, JANUARY 11, 1930.

No. 2.

Authors of articles submitted for publication are requested to read the following instructions and to comply with them.

All articles must be typed with double or treble spacing. Carbon copies should not be sent. Abbreviations should be avoided, especially those of a technical character at times employed in ward notes. Words and sentences should not be underlined or typed in capitals. The selection of the correct type is undertaken by the Editors. When illustrations are required, good photographic prints on glossy gaslight papers should be submitted. Each print should be enclosed in a sheet of paper. On this sheet of paper the number of the figure and

the legend to appear below the print should be typed or legibly written. On no account should any mark be made on the back of the photographic print. If no good print is available, negatives may be submitted. Line drawings, graphs, charts and the like should be drawn on thick, white paper in India ink by a person accustomed to draw for reproduction. The drawings should be large and boldly executed and all figures, lettering and symbols should be of sufficient strength and size to remain clear after reduction. Skiagrams can be reproduced satisfactorily only if good prints or negatives are available. The reproduction of all illustrations, but especially of skiagrams, entails the sacrifice of

time and energy and is expensive. Authors are expected to take a corresponding amount of trouble in the preparation of their illustrations, whether skiagrams, photographs, wash drawings or line drawings. The references to articles and books quoted must be accurate and should be compiled according to the following scheme. The order should correspond to the order of appearance in the article. The initials and surnames of the authors, the full title of the article or book, the full (unabbreviated) title of the journal in which the article appears, the date of the issue (day, month and year) and the number of the first page should be given in this sequence.

Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—	PAGE.	LEADING ARTICLES—	PAGE.
"The Staphylococcus Aureus as the Probable Cause of a Fatal Disease Simulating Laryngeal Diphtheria," by R. Y. MATHEW, M.B., B.S.	34	A Retrospect	53
"Complication of Injuries About the Elbow," by D. J. GLISSAN, M.B., F.C.S.A.	36	ABSTRACTS FROM CURRENT MEDICAL LITERATURE—	
"Fractures Around the Elbow," by H. G. HUMPHRIES, M.B., Ch.M.	39	Surgery	58
"The Venom of Latrodectus Hasseltii," by C. H. KELLAWAY, M.C., M.D., M.S., F.R.C.P.	41	BRITISH MEDICAL ASSOCIATION NEWS—	
"Cytological Observations of a Lumsden Rat Sarcoma," by E. S. HORNING, M.A., D.Sc., and K. C. RICHARDSON, M.Sc.	46	Scientific	60
"Ligature of the Internal Jugular Vein Above the Posterior Belly of the Digastric Muscle," by E. S. MEYERS, M.B., F.C.S.A.	48	Nominations and Elections	60
REPORTS OF CASES—		OBITUARY—	
"Hemiplegia During Labour and the Puerperium," by CECIL COGHAN, M.B., Ch.M., F.R.C.S., M.R.C.P.I., D.G.O., F.C.S.A.	48	Athelstan John Henton Saw	60
"Four Cases Illustrating the Role of Sepsis in Ill Health," by A. M. WATKINS, M.B., B.S.	49	Reginald Freshney	62
"A Diphtheria-Like Disease," by WALLACE KING, M.B., Ch.M.	50	Charles Herbert Clatworthy	62
REVIEWS—		MEDICAL PRIZES—	
The Female Pelvis	50	The Alvarenga Prize	62
The Injection Treatment of Varicose Veins	50	NEW YEAR HONOURS	62
Standardized Treatment	51	CORRESPONDENCE—	
The Health of the Indian Army	51	The Ætiology of Rodent Ulcer	63
Gastroscopy	51	The Invalid Pension	63
The Heart	51	PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—	
A Difficult Problem	52	Queensland	63
ANALYTICAL DEPARTMENT—		Tasmania	64
"Oleocal"	52	BOOKS RECEIVED	64
		DIARY FOR THE MONTH	64
		MEDICAL APPOINTMENTS	64
		MEDICAL APPOINTMENTS VACANT, ETC.	64
		MEDICAL APPOINTMENTS: IMPORTANT NOTICE	64
		EDITORIAL NOTICES	64

THE STAPHYLOCOCCUS AUREUS AS THE PROBABLE CAUSE OF A FATAL DISEASE SIMULATING LARYNGEAL DIPHTHERIA.

By R. Y. MATHEW, M.B., B.S.,

Medical Officer in Charge, Commonwealth Health Laboratory, Toowoomba, Queensland.

THE following notes of four cases which clinically resembled laryngeal diphtheria, are recorded as being of interest owing to the evidence pointing to the *Staphylococcus aureus* as the ætiological agent. These cases occurred in a district in which diphtheria was prevalent. The evidence in favour of primary laryngeal diphtheria, that is, croup with gradually increasing obstruction, seems to be more than balanced by the evidence against it, the absence of response to injections of diphtheria antitoxic serum and the absence of visible membrane in the trachea. Further, the higher temperature recorded, the repeated failures to find *Bacillus diphtheriæ* in cultures from the throats and material from tracheotomy tube, the repeated findings of *Staphylococcus aureus* in these cultures and the culturing of the same organism from the patch of bronchopneumonia and the pericardial fluid at *post mortem* examination strongly support the view that the conditions were primarily an infection of the larynx with highly virulent and highly toxigenic staphylococci.

Inquiries have been made of medical practitioners in surrounding towns on the Darling Downs as to whether similar cases have been met with recently. From the replies received it is evident that there has been a number of cases in the district. They have resembled those described above, in that there was no evidence of membrane formation in the throat or trachea or of *Bacillus diphtheriæ* on culture, no response to diphtheria antitoxic serum. In twelve patients the gradually increasing obstruction rendered tracheotomy necessary and the temporary relief afforded was followed in nine by evidence of further obstruction lower down in the respiratory tract and death.

During July, 1929, three children of one family were affected in succession with an illness closely resembling laryngeal diphtheria. Two required tracheotomy and died, the third one recovered without tracheotomy. No *Bacilli diphtheriæ* were observed in cultures from these patients. The clinical histories were as follows:

CASE I. Male child, aged four years, was admitted to Toowoomba General Hospital at 3.20 in the afternoon of July 5, 1929. The temperature was 39.4° C. (103° F.), the pulse rate 160 and the respiratory rate 40. The child was well nourished and had no history of previous attacks of croup or of other illness. He had been croupy for two days. The child was very distressed and there was much laryngeal obstruction and recession. The colour was good. On admission he was given 20,000 units of diphtheria antitoxic serum subcutaneously and put in a steam tent. The signs of obstruction increased, with definite suprasternal, infrasternal and supraclavicular recession and cyanosis. Tracheotomy was performed at one o'clock in the morning of July 6, 1929. No definite evidence of membrane formation was observed in the trachea. Relief was obtained, but signs of obstruction again appeared; the child's condition became worse and death occurred a few

hours later, apparently from suffocation and cardiac failure. No *Bacilli diphtheriæ* grew in the culture tubes inoculated with the throat secretion.

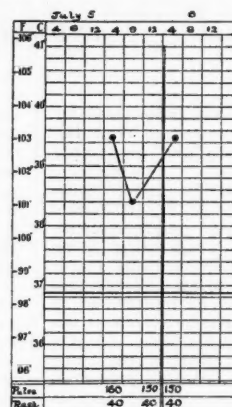


CHART I.

CASE II. Male child, aged two years, was admitted to Toowoomba General Hospital at three o'clock in the morning of July 7, 1929. The temperature was 37.6° C. (99.8° F.), the pulse rate 120 and the respiratory rate 30. The child was playing about at five o'clock in the afternoon of July 6, when it was noticed that his voice was a little hoarse. He awakened with croup at eleven o'clock. Medical advice was obtained and the child was given 5,000 units of diphtheria antitoxic serum and sent to hospital. The child was well nourished and there was no history of previous attacks of croup or other illness. At the time of admission the throat was clean, but there was some evidence of laryngeal obstruction. He was given 25,000 units of diphtheria antitoxic serum subcutaneously and put in a steam tent. The serum was repeated until in two days 60,000 units had been given. The child was fairly comfortable with less evidence of obstruction at eleven o'clock in the morning of July 7, but the evidence of obstruction increased and the child's condition gradually became worse; tracheotomy was performed at eleven at night. No diphtheritic membrane was observed in the trachea. The child was relieved at the time, but the relief did not last long. Attacks of acute obstruction with convulsive spasms occurred in the next two days and the child died early in the morning of July 10, 1929. Cultures from the throat on July 8 and 9 contained *Staphylococcus aureus*, but no *Bacilli diphtheriæ* were observed. Muco-

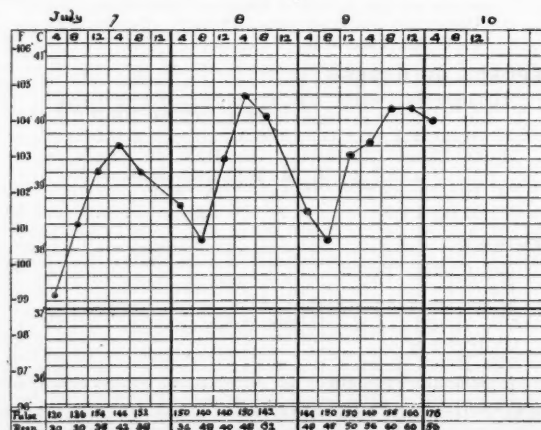


CHART II.

purulent material unlike diphtheritic membrane was coughed through the tube on July 9. *Staphylococcus aureus* grew on culture, but no *Bacillus diphtheriae*.

CASE III. Female child, aged six years, was under observation and although she was well, her throat was swabbed on July 8, 1929. Her throat was clean and no

CASE IV. Male child, aged fifteen months, was admitted at half past one in the afternoon of August 1, 1929. His temperature was 38.1°C . (100.8°F .), his pulse rate was 158 and his respiratory rate was 40. He was well when he went to bed on July 31, 1929, but awakened at four o'clock in the morning with croup. He improved during

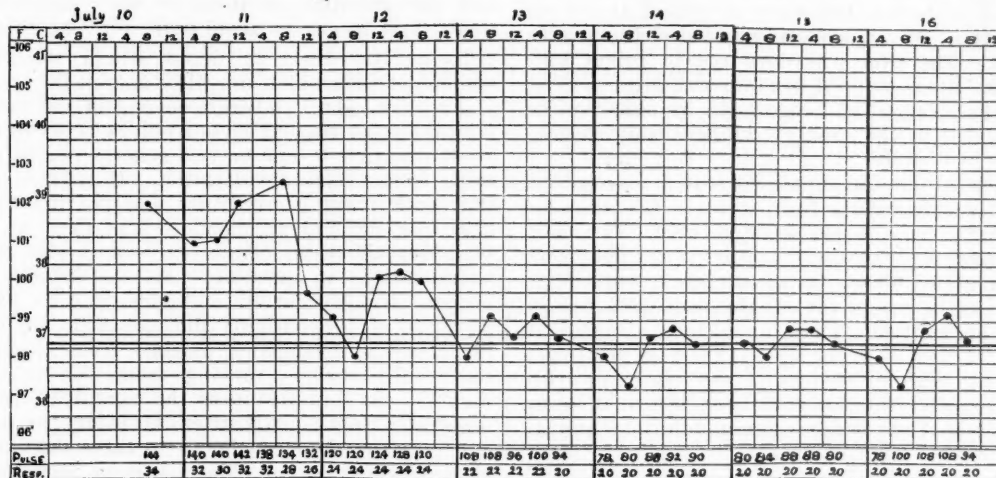


CHART III.

Bacillus diphtheriae were recovered. She was admitted to Toowoomba General Hospital at half past seven in the evening of July 10, 1929. Her temperature was 38.8°C . (102°F .), her pulse rate 144 and her respiratory rate 44. She had loss of voice and croup for twelve hours. Her throat was clean. She had slight evidence of laryngeal obstruction with recession. Her colour was good. She was well nourished and there was no history of previous attacks of croup. On admission 30,000 units of diphtheria antitoxic serum and ten cubic centimetres of antistaphylococcal serum were given subcutaneously. The same dose of antistaphylococcal serum was repeated on the morning of July 11. The child's condition was then much improved. The fauces were slightly inflamed, but no evidence of membrane formation was present. There was still some croup, but no evidence of respiratory embarrassment. The child's condition steadily improved and she was discharged relieved on July 17, 1929. Throat cultures on July 10, 1929, contained *Staphylococcus aureus*, but no *Bacillus diphtheriae*. A culture tube inoculated with blood on July 11 remained sterile, while in culture tubes inoculated from the throat *Staphylococcus aureus* but no *Bacillus diphtheriae* was grown.

On August 1, 1929, another child, not associated with the other three, was admitted to Toowoomba General Hospital in a condition similar to those just described. The clinical history was as follows:

the morning, but on admission to hospital there was a good deal of laryngeal obstruction and recession. The child was given 30,000 units of diphtheria antitoxic serum and twenty cubic centimetres of antistaphylococcal serum, both subcutaneously; he was put in a steam tent. The child became more distressed with definite evidence of obstruction, and at five o'clock in the afternoon tracheotomy was performed. No evidence of membrane was observed in the trachea. Relief was obtained for a few hours, when breathing again became obstructed. These

attacks of obstruction with convulsive spasms, which were apparently relieved by cleaning the trachea with an oiled feather, came on at intervals until death occurred at six o'clock in the morning of August 7, 1929. Some bright blood was coughed up through the tube on the morning of August 4, 1929, and the tube was removed. On August 5 the child was breathing through the tracheotomy wound in the neck with a certain amount of difficulty and occasionally coughing up some purulent material of offensive odour. Ten cubic centimetres of anti-

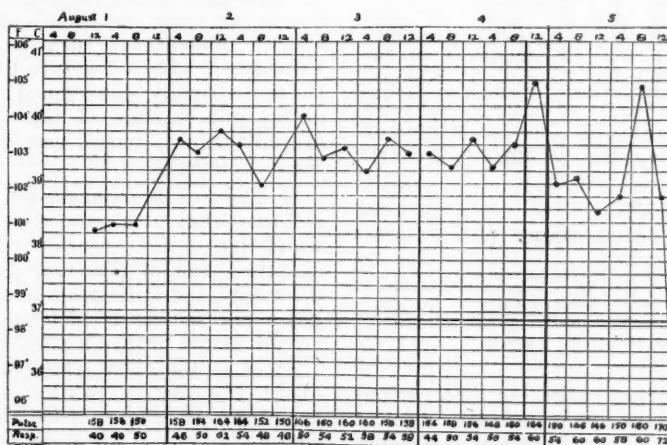


CHART IV.

staphylococcal serum were injected subcutaneously each day until August 5, 1929. Cultures from trachea immediately after tracheotomy had been performed on August 1, from the throat on August 2 and from material coughed through the tube on August 5 revealed *Staphylococcus aureus* only, no *Bacillus diphtheriae* being observed.

The following observations were made at a *post mortem* examination of this child's body. It was

a well nourished, pot bellied male child. There was sero-purulent fluid evident round the tracheotomy wound in the neck.

On opening the peritoneal cavity the colon and loops of the small bowel bulged out and were much distended with gas, but were devoid of liquid or solid matter. No evidence of any bowel lesion was observed. The liver was dark red in colour and engorged. Blood dripped from the cut surface. The spleen was enlarged and engorged. No abnormality was observed in the stomach, kidneys, suprarenals, pancreas or bladder.

The pericardial sac contained half a teaspoonful of slightly turbid fluid from which a few colonies of *Staphylococcus aureus* were cultured. The right auricle and ventricle of the heart were distended with coagulated blood. On the surface of both lungs were areas in which the pleura was dark red in colour and mottled. These areas were situated at the base of the left upper lobe, at the base and lower half of the anterior surface of the left lower lobe, at the base and anterior surface of the right lower lobe, in a portion of the right middle lobe and at the base of the right upper lobe.

These areas when sectioned appeared to be confluent patches of bronchopneumonia producing a pseudolobar effect. Profuse growth of *Staphylococcus aureus* was obtained on culturing the purulent fluid expressed from one of these patches. The bronchial glands on both sides were enlarged and dark red in colour. The trachea and bronchi which contained some sero-purulent fluid, were dissected down to the bronchioles. No evidence of membrane formation or gross inflammatory changes were observed. The air passages above the tracheotomy wound were clear and clean.

I am indebted to the late Dr. Freshney, then Medical Superintendent, and the members of the honorary medical staff of the Toowoomba General Hospital and to the medical practitioners of the surrounding country towns for their assistance in collecting the information and for their permission to publish the notes of these cases.

COMPLICATION OF INJURIES ABOUT THE ELBOW.¹

By D. J. GLISSAN, M.B. (Sydney), F.C.S.A.,
Honorary Orthopaedic Surgeon, Saint Vincent's Hospital;
Honorary Assistant Orthopaedic Surgeon, Royal
Prince Alfred Hospital, Sydney.

I WISH to call your attention to the various complications that may be associated with injuries about the elbow since it has been my experience that they are not rare and it is common knowledge that some of them have grave consequences.

The series of thirteen cases I have tabulated is in no sense statistical, for I have no record of the total number of injuries about the elbow I have seen during the last two or three years, the

period over which I commenced to collect the cases that form the basis of this communication. In all probability they would be found to constitute a very small percentage, but the fact that these complications exist at all, is sufficient justification to call our attention to them, to their gravity and to the best means to avoid and overcome them.

To analyse them in detail would require an amount of time which can ill be spared this evening and whilst I shall elaborate several of the case histories, I must content myself otherwise by drawing your attention to one or two general points which arise from their consideration. It will be noted that each main nerve trunk and the brachial or radial artery may be damaged and that all types of injury about the elbow region may produce the complications in question. All the injuries with two exceptions occurred in children and the parents of eight of the patients did not seek advice for the various disabilities arising from the elbow injury for periods varying from one to fifteen months. In four instances the complications were discovered very shortly after the injury, at periods ranging from fourteen hours to three days and in three of these patients the discovery predated any attempt at treatment by myself. In the fourth child the supracondylar fracture had already been reduced when she came under my care. In none of these four did the child concerned make any complaint likely to call attention to the complication existing. If there is one lesson to be learnt from studying these cases, it is the need of careful clinical examination and in these days of dependence on extraclinical methods for diagnosis, I have no hesitation in laying heavy stress on the necessity for making clinical examination our first line of attack in these as in all other fractures. The modern tendency to turn at once to radiography when faced with a fracture cannot, in my opinion, be too strongly condemned. I yield to no one in my appreciation of the value and importance of radiography, but I use it as a supplement to clinical methods.

It has to be remembered when dealing with children that the only subjective symptom with which the child concerns itself is pain. Loss of sensation and of muscular power, the presence of deformity, the diminution or cessation of the radial pulse are not to be detected by any dependence on the small patient's complaint.

Since all the grave complications following injury about this region exhibit all or some of these symptoms, it follows, if we are to detect them, that we must examine for them clinically. Radiograms will not yield evidence of injuries to nerves or vessels nor will they reveal the symptoms of such injuries. In tiny children it is not easy to elicit positive evidence of early nerve injuries and care and patience have to be used and frequent examinations made, if we are to detect these symptoms early. An examination of each radial pulse on the other hand is easily carried out and should never be omitted.

¹ Read at a meeting of the New South Wales Branch of the British Medical Association in conjunction with the Section of Paediatrics, the Section of Radiology and the Section of Orthopaedics on July 25, 1929.

My own routine in dealing with all injuries about the elbow is to examine carefully first the hand and forearm for any signs of interference with any of the nerve trunks or vessels about the elbow. It is disquieting to find after an attempt at reduction that the radial pulse is absent or that there is loss of power in some of the hand muscles. To detect these signs beforehand is to arm oneself with a most valuable piece of knowledge in formulating treatment and prognosis.

Let me now quote three of the cases to illustrate this point.

One, a young boy, Case 11, presented with a supracondylar fracture with the usual backward displacement sustained some hours previously. Examination showed absence of radial pulse on the affected side, but no other sign of vascular disturbance and no sign of involvement of the median or other nerve trunk. His fracture was reduced under an anæsthetic, the forearm flexed on the arm and he was admitted to hospital for continuous observation over twenty-four hours. The reduction was completed without difficulty, no untoward symptoms followed and no radial pulse could be detected at the time of his discharge with complete function.

The most probable explanation is that the radial artery was absent on this side, but the early discovery saved much heart burning after reduction and made us carefully alive to the possibility of any permanent damage resulting from injury to the radial or brachial vessel.

Case 3 was that of a small girl seen by myself within three days of injury. She had had a classical supracondylar fracture which at the time I saw her had been fully reduced. Examination showed a diminished radial pulse and loss of power in the thenar group of muscles with anæsthesia in the median distribution. Treatment was at once commenced by splinting, since it was thought at the time that the condition was a median nerve injury mainly. The child developed within the course of several weeks typical signs of ischæmic palsy. These, however, ultimately cleared up very satisfactorily to the point of practically full function. If the symptoms had not been detected early, the ultimate outcome might have been very different.

Case 5 was that of a small girl referred to me three days after injury resulting in a classical supracondylar fracture. One attempt at least had been made to reduce it, but without success. The forearm was secured in full flexion by bandages. Examination revealed absence of radial pulse and definite involvement of the median nerve. The forearm was at once extended. The pulse had returned in about twenty hours, fracture was reduced by open operation and secured at right angles in plaster. Open operation was carried out in this case in the presence of a good deal of persistent swelling about the elbow and it was hoped that the free opening of the tissues would have the effect of lessening this. It also allowed reduction to be carried out without the use of full flexion which we found immediately blocked the radial pulse.

There is yet another case I wish to describe a little in detail. It is the first of the series and one of the two adult cases. It illustrates one of the delayed complications of elbow joint injuries and raises the interesting question of the best method of dealing with injuries to the head and neck of the radius.

This patient was a woman of thirty-seven years. In childhood she had dislocated the head of one radius forward. For many years it had given her no trouble. She had perfect function at the false joint and disregarded the moderately developed *cubitus valgus* which naturally

resulted from her mechanical discrepancy. Sixteen months before she was referred to me she had commenced to feel numbness in the little and ring fingers. Her symptoms progressed and at the time of my examination she had a complete picture of ulnar nerve irritation. At operation to transfer the nerve to the front of the elbow and forearm, I found about two and a half centimetres (one inch) of the trunk reddened and sclerosed. The increase of the fibrous tissue elements was well demonstrated when the branch of supply to the *flexor carpi ulnaris* and *flexor profundus digitorum* was stripped to lengthen it and to allow the nerve trunk to come to the front. The nerve twig stripped as readily as usual until I came to the inflamed area, when the greatest care had to be exercised to preserve it intact, so firmly was it bound by scar tissue. The trunk was quite tightly stretched over the medial epicondyle. Sensation began to return about a week after operation and she has made a steady improvement to the point you have seen.

This and similar cases reported from time to time show that *cubitus valgus* following an injury is liable to be followed by this distressing sequela.

Brickner reports a case following an injury to the elbow in a woman of fifty-two years, occurring fifteen months after injury, but not associated with *cubitus valgus*. In the majority of the reported cases the typical picture follows the onset of the injury in from three to forty years.

The question of treatment of injuries about the elbow is being dealt with by Dr. Humphries and I do not wish to detain you by covering the same ground, except to stress one or two points. In the first place, it must be recognized that reduction of a supracondylar fracture is not effected by flexing the elbow. The essential factor in reduction is realignment by steady traction in slight hyperextension at the site of fracture and then while traction is being maintained, the fragment is pushed forward into position as the forearm is drawn up into the flexed position. The rôle of flexion is to maintain reduction. The fragment can usually be felt to slip forward into position, but if I do not so feel it, I have no hesitation in gently undoing my previous movements, when, if reduction has been effected, it will be undone and the fragment will be seen and felt to slip off the humerus. Lateral displacement should be corrected while the preliminary traction is being maintained.

In the second place, I wish to point out that flexion without reduction having been secured is a dangerous measure and if the surgeon is not quite sure that reduction has been secured, he should maintain the limb at not more than the right angle position.

The third point is that it is not necessary for the maintenance of reduction to keep the forearm acutely or forcibly flexed. The correct degree can be maintained by using a bandage clove hitched about the wrist and tied about the neck with the ends of the bandage left long and the hand held well up to the chin or as close to it as swelling will permit. Under no circumstances should the forearm be secured to the arm by bandages and particularly not by adhesive strapping. The pad in the elbow I regard as not only unnecessary, but as a menace. A little methylated spirit dropped

TABLE I.

Case.	Lesion.	Age (Years).	Structure Affected.	Intervals After Injury.	Pulse.	Recovery.	Notes.
1	Dislocation of head of radius.	37	Ulnar nerve	30 years	Present	Yes	Ulnar neuritis associated with <i>cubitus valgus</i> ; nerve transposed to front of forearm.
2	Supracondylar fracture, postero-lateral displacement.	7	Median nerve	1 day	Reduced	Yes	Fracture reduced under anæsthetic twelve days after injury; treatment in public hospital, which probably accounts for delay.
3	Supracondylar fracture, posterior displacement.	5½	Ischemic paralysis	3 days	Very faint	Yes	Symptoms discovered on examination when first seen; fracture had been reduced already; treated by splints from outset; median nerve slightly affected.
4	Dislocation of elbow.	11½	Ulnar nerve	1 month	Present	No notes	Full ulnar involvement, no notes as to progress; elbow stiff at time of examination.
5	Supracondylar fracture, posterior displacement.	6½	Brachial artery	3 days	Absent	Complete	Unsuccessful attempt at reduction before being seen. Elbow fully flexed with bandages; pulse returned in twenty hours following the undoing of flexion; slight involvement of median nerve; open reduction of fracture.
6	Dislocation of elbow.	14	Ulnar nerve	2 months	No notes	Partial	Patient drew my attention to anæsthesia of little finger; nerve explored; excision of scar and transplantation of front of elbow.
7	Dislocation of elbow.	10(?)	Median nerve	1 year	No notes	Practically full	Mother noticed wasting two weeks before I saw the child; treated by splinting.
8	Supracondylar fracture.	9	Radial nerve	7 weeks	Present	Full	The child developed pneumonia very soon after injury and reduction of fracture; the condition was discovered after her recovery.
9	Dislocation of head of radius.	20	Radial nerve (deep branch)	3 months	Yes	See notes	Exploration of deep branch of the radial, and about 2.5 centimetres (one inch) found scarred; tendon transplantation, and full function recovered; dislocation unreduced.
10	Dislocation of elbow and fissured fracture of humerus extending into joint.	10	Radial nerve	1 month	Present	Yes	Patient was a deaf and dumb boy; paralysis noted late; recovery with splinting.
11	Supracondylar fracture.	8	Radial artery	14 hours	Absent	Yes	Reduction under anæsthetic; admission to hospital for twenty-four hours' observation; radial pulse remained absent, probably congenital absence of radial artery.
12	Supracondylar fracture, gross displacement.	8	Ischemic paralysis	15 months	Absent	No	Patient was slightly improved by splinting; exploration showed gross involvement of median nerve at time of injury.
13	Supracondylar fracture, gross displacement.	3	Ischemic paralysis	9 weeks	Present	Improved very much to the point of excellent function	Treated by splinting.

into the fold of the elbow daily and brushed across with a strip of gauze is all that is required to prevent chafing. It matters not whether the forearm is pronated or supinated, the relation of the head of the radius to the humerus and the tension on the triceps are the same in either case.

Following reduction I make it an unalterable rule to have the pulse on the affected side palpated once every half hour for twelve or twenty-four hours, according to the degree of swelling. If it ceases to be palpable or becomes lessened in volume, my instructions are to lower the hand gently by lengthening the sling bandage until the pulse returns and to report to me at once. I make careful examinations every two or three days for a week for any sign of involvement of any of the nerve trunks. A very useful method in the case of the median is to satisfy oneself that the child can abduct and oppose the thumb. The child is shown how to carry out all wrist, finger and thumb movements from the outset and in this way failure in any movement can be more readily detected. In

the presence of complications immediate treatment should be resorted to. Splints to relax paralysed and weakened muscles and to anticipate or prevent muscle contractures should be carefully fitted. It is a simple matter to cut out a suitable splint in aluminium, with the sound hand used as a pattern and then to reverse it for the affected side. If the nerve injury, particularly of the median, is obviously severe or if in the apparently simple types improvement does not follow conservative methods within eight or ten weeks, exploration of the affected nerve should be undertaken. To wait longer is to risk the onset of such a degree of fibrosis in the intrinsic muscles of the hand as will render unavailing the most carefully carried out nerve suture or neurolysis. One can afford to wait longer in the case of the radial group, since not only has this nerve a greater inherent capacity for improvement and recovery after injury than its fellows, but in the event of total nerve loss a completely successful functional result can be obtained by tendon transplanation.

ILLUSTRATIONS TO THE ARTICLE BY DR. H. G. HUMPHRIES.



FIGURE I.
Extension Variety, Supracondylar Fracture.



FIGURE II.
Extension Variety, Supracondylar Fracture.

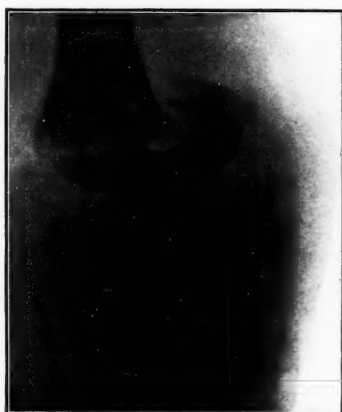


FIGURE III.
Supracondylar Fracture. Displacement to Inner Side.



FIGURE IV.
Supracondylar Fracture with Forward Displacement of Lower Fragment. Brachial artery involved. After healing.



FIGURE V.
Fracture of External Condyle.



FIGURE VI.
Fracture of External Condyle.



ILLUSTRATIONS TO THE ARTICLE BY Dr. H. G. HUMPHRIES.



FIGURE VII.
Myositis Ossificans.

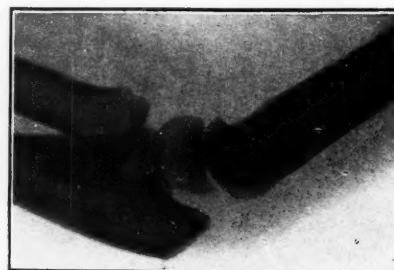


FIGURE VIII.
Normal Elbow in a Child of Seven Years.



FIGURE IX.
Myositis Ossificans.



FIGURE X.
Myositis Ossificans.



FIGURE XI.
Showing New Articular Surface After Healing
and Absorption of the Old Head.

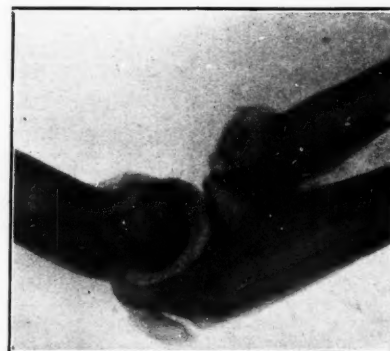
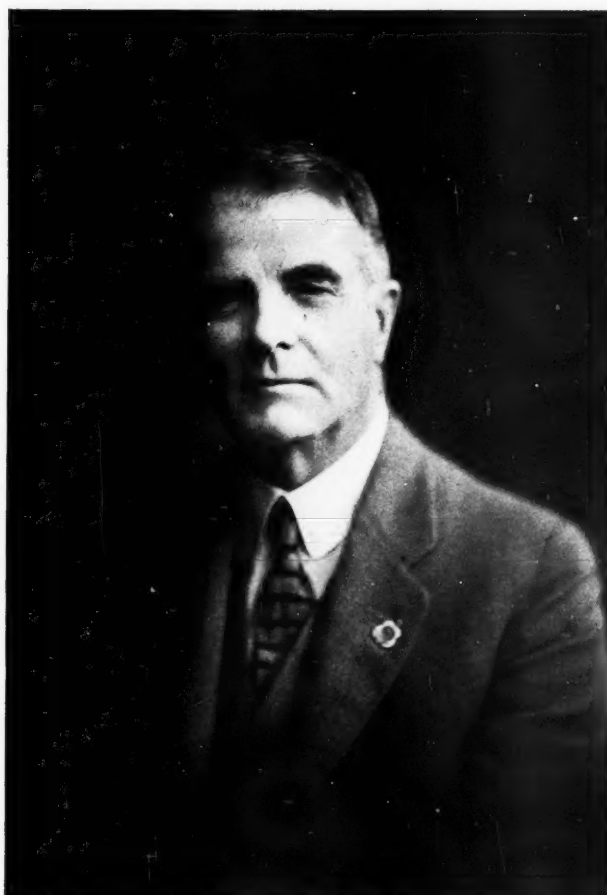
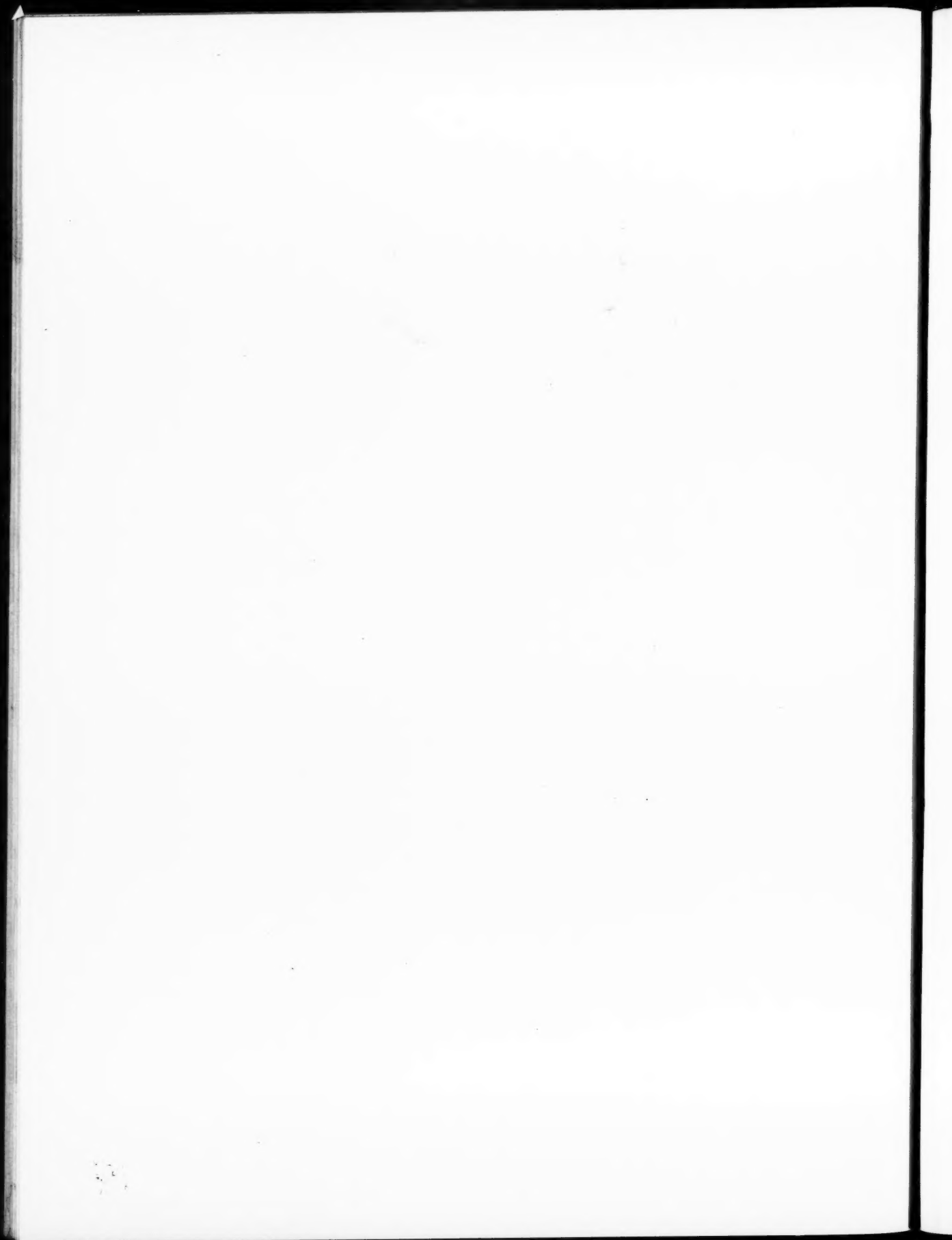


FIGURE XII.
Showing New Articular Surface After Healing
and Absorption of the Old Head.



ATHELSTAN JOHN HENTON SAW.





ILLUSTRATIONS TO THE ARTICLE BY DR. E. S. HORNING AND DR. K. C. RICHARDSON.

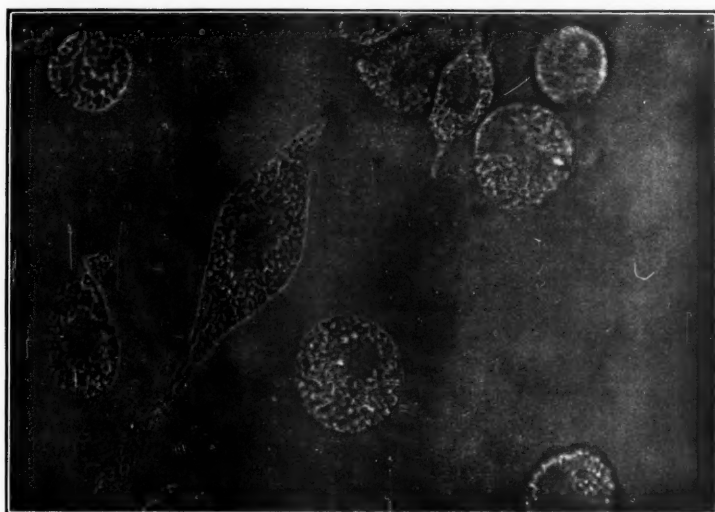


FIGURE I.

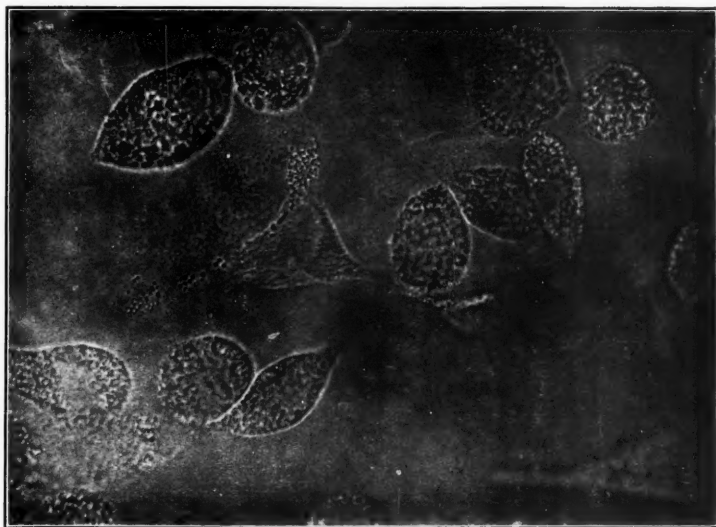


FIGURE II.

Microphotographs depicting unstained living cells (as shown by direct illumination) composing a Lumsden rat sarcoma, taken around the periphery of an actively growing culture after 28 hours' growth *in vitro* in a medium of plasma and embryonic extract.

Cells in the transitional stage and many intermediate types are seen between the tumour cell proper and the pseudofibroblast. In Figure I a newly formed fibroblast-like element is depicted; note the refractive cell granules within the clear homogeneous protoplasm.



lybno9
lybno9 lre
lybno9

FRACTURES AROUND THE ELBOW.¹

By H. G. HUMPHRIES, M.B., Ch.M. (Sydney),
Honorary Assistant Surgeon, Royal Alexandra Hospital for
Children.

In this paper I shall confine my observations to cases observed at the fracture department of the Children's Hospital during the past ten years, drawing attention to the types most commonly encountered.

In my opinion the vast majority of these fractures responds to treatment by conservative means and operative interference should not be considered unless the indications for such are very definite, for example, persistent nerve block, obstruction to the brachial artery or other main vessels or inability to correct considerable displacement of the fragment or fragments by manipulation.

Fractures around the elbow are of common occurrence in children. The injury may involve one or more of the bones articulating at this joint. The commonest situation for the line of fracture is in the lower end of the humerus, the so-called supracondylar variety. This being so, it is important to note the progress of ossification in this situation, as generally accepted.

At birth the lower humeral epiphysis is entirely cartilaginous, the first centre of ossification appearing in the *capitellum* in the second year of life. Between the eighth and twelfth years the centre for the epicondyles appears, accompanied by a convex prolongation from the diaphysis.

The centre for the trochlea does not appear until between the twelfth and fifteenth years, when the centres for the *capitellum* and external epicondyle unite. The lower epiphysis unites with the shaft at about the seventeenth year.

The lower epiphysis in childhood is therefore a thin irregular structure and complete separation would be very unlikely to occur. Most cases so described are probably supracondylar fractures occurring at a low level.

According to the line of fracture the following names are applied to the different types: Supracondylar, intercondylar or T-shaped, fracture of external or internal condyle, of the articular processes (*capitellum* or *trochlea*) and of the external or internal epicondyle.

The commonest is the supracondylar fracture. It may be incomplete (greenstick variety), but is more often complete. The line of fracture varies according to the direction of the force responsible for the injury. In most cases the lower fragment is displaced backwards and upwards, the force being applied on the outstretched hand and forearm and the line of fracture running from the front upwards and backwards, the so-called extension variety (see Figure I). On rare occasions the lower fragment may be directly displaced forwards and upwards, the line of the fracture running from

behind upwards and forwards, the so-called flexion variety. In others, the main direction of displacement is to one or other side, more often to the inner side (see Figure III). In all three types there may be in addition some rotation of the lower fragment. In supracondylar fracture the brachial artery, ulnar, median or musculo-spiral nerve may be involved, either at the time of the accident when it is more or less inevitable, or subsequently, in which case it is most often due to faulty treatment.

In supracondylar fracture with forward displacement of the lower fragment the brachial artery is particularly apt to be injured. I have seen two such cases (Figure IV) in which pulsation was noted to be lost at the wrist immediately following the injury; in both patients at operation the vessel was exposed and found to be acutely flexed over the projecting lower fragment, so much so that transmission of the pulse was completely blocked at this spot. On replacing the fragment and applying warm pads to the vessel, the circulation was gradually restored, proving that the arterial intima in children will tolerate much abuse. In such cases after correction of the displacement the limb is best maintained in the extended position for at least one week before being placed in the position of acute flexion.

Also inevitable, taking place at the time of the accident, is the damage to the median nerve, which on rare occasions may occur in supracondylar fractures with backward displacement of the lower fragment. It is caused by the lower edge of the upper fragment projecting through the *brachialis anticus* muscle. This condition also may require surgical intervention, that is when signs of nerve block persist after correction of the bony displacement.

Fracture of the internal epicondyle (epitrochlea) is more common in children than in adults and often accompanies dislocation of the elbow. Being intracapsular in children it may be displaced into the joint cavity, thereby limiting movements, so necessitating removal by operation. In children this condition is really an epiphyseal separation. There may be an associated ulnar nerve injury resulting primarily from the original trauma or later from faulty treatment, for example too vigorous passive movement or later still from chronic irritation in which case anterior transposition may be required. The fragment is usually drawn downwards by the contraction of the flexor muscles attached to it.

Fracture of the external epicondyle is extremely rare.

Fracture of the external condyle (see Figures V and VI) is almost as common in children as supracondylar fracture, whereas fracture of the internal condyle is rare. In either type the fragment does not tend to be much displaced and can generally be replaced by manipulation. In exceptional cases where there is complete separation and rotation, suture of the periosteum and fibrous tissue may be necessary to correct the displacement.

¹Read at a meeting of the New South Wales Branch of the British Medical Association in conjunction with the Section of Pediatrics, the Section of Radiology, and the Section of Orthopaedics on July 25, 1929.

Fracture of the external condyle tends to result in *cubitus valgus* owing to interference with epiphyseal growth on the outer side giving relatively greater length on the inner side. It is in this connexion that we occasionally meet with delayed ulnar palsy after the lapse of ten or more years, owing to the exposed position of the nerve.

Fracture of the internal condyle may result in *cubitus varus* or gun-stock deformity, but in all patients in whom I have seen this late alteration of the carrying angle, the original cause has been a supracondylar fracture with internal lateral displacement of the lower fragment.

T-shaped fracture is very rare in children. Bristow denies its existence in childhood, but it has been observed in this hospital.

In all cases of fracture around the elbow, diagnosis depends on careful palpation of cardinal points and evidence of pain and abnormal mobility. Skiagrams should be taken, generally in two directions, from side to side and antero-posteriorly.

In treatment at the fracture department of the Children's Hospital we adopt Sir Robert Jones's methods for all fractures around the elbow with the exception of olecranon fractures and those rare cases of flexion supracondylar fractures to which reference has already been made.

The administration of anæsthesia is advisable in most circumstances. Continuous downward traction is exerted on the extended forearm, an assistant applying counter-extension to the arm. The lower fragment is carefully manipulated into position. It may be necessary to hyperextend the forearm to disengage the fragment. The forearm is then carried up into the acutely flexed position with full supination and retained in that position by bandaging, the limb being supported by the "cuff and collar" method or by a suitable modification. Omission of any one detail may lead to disastrous results. The angle of flexion will be less acute according to the degree of swelling of the limb. The pulse at the wrist must be constantly observed, since in these fractures there is always the grave risk of interference with the circulation and subsequent development of ischæmic paralysis. For the same reason pain in the limb may be a very serious symptom. Therefore we may have to be content with the right angle position for some days before the position of acute flexion can be attained without risk to the circulation.

The bandaging is removed and reapplied daily for the first four days, after which period the limb need not be so acutely flexed. In some patients in whom the acutely flexed position will tend to tilt the lower fragment forwards, the angle of flexion must be slightly opened out or increased. In this connexion it is interesting to note that very often in children the lower humeral epiphysis joins the shaft at an angle (see Figure VIII).

After two weeks when there is fairly firm bony union the forearm is gradually brought down a few centimetres every few days until a right angle is reached when the sling may be discarded, possibly at about the end of the fourth week. In lowering

the forearm we must be sure the patient can actively regain the acutely flexed position; if not, the arm must be put up in this position again for some days before continuing to open out the angle of flexion. During all these weeks, forced passive movement is strongly contraindicated, in fact only after four weeks should passive movement be considered and if then adopted, it should be of the mildest degree, at all times avoiding infliction of pain.

Most of the evils accompanying fractures around the elbow are due to neglect of one or more details in treatment.

Failure to correct displacement leads to impaired function at the joint and tends to expose nerves to trauma.

Over-eagerness on the part of the surgeon to open out the angle of flexion may cause considerable damage to the tissues and lead to a condition of *myositis ossificans* (see Figures VII, IX and X) or else induce a block in one of the nerves in the region of the fracture, ulnar, median or musculo-spiral.

If we insure power of flexion by these methods, we may rest assured that the power of extension will eventually follow, even though it may not be complete for three months from the date of injury.

In the ulna, fracture of the coronoid process is very rare except when associated with backward dislocation of the elbow. In treatment we find the adoption of acute flexion gives quite satisfactory results.

In fracture of the olecranon process in children there is very little tendency for the fragment to separate owing to the attachment of the extension of the triceps tendon. In all cases it is best to place the limb in extension on an anterior splint for about two weeks before fixing in flexion. When there is a wide separation of the fragment, after correcting the displacement a pad under pressure should be applied over the triceps muscle just above the elbow to counteract its traction on the olecranon.

In fracture of the head or neck of the radius the fragment usually retains connexion with the periosteum of the shaft and the treatment as adopted for fractures at the lower end of the humerus gives every satisfaction. If the fragment is loose and cannot be replaced and is interfering with the function of the joint, it is best removed.

In elbow fractures, given a reasonable chance, Nature will achieve wonders. In the course of time the evil results of faulty treatment are often diminished and obliterated. New joint surfaces are developed where the old are destroyed, abnormal projections are rounded off and angular deformities straightened out in the process of growth. This is well exemplified in the case of a girl who reported to this hospital in November of last year suffering from stiffness in the elbow which had been present for three months dating from an injury which had been diagnosed and treated as a sprain. The skiagram revealed an old fracture of the neck of the radius with the upper fragment badly tilted forwards. During the present week, eight months

later, the second skiagram was taken and shows considerable changes (see Figures XI and XII). A new articular surface has been modelled to take the place of the old which now serving no useful purpose, is undergoing a process of absorption. The functional capacity of the joint is now quite normal.

Bibliography.

- Robert Jones: "Injuries to Joints."
 Page and Bristow: "The Treatment of Fractures and Dislocations."
 Harry Platt: "On the Peripheral Nerve Complications of Fractures and Dislocations of the Elbow."

THE VENOM OF LATRODECTUS HASSELTII.

By C. H. KELLAWAY, M.C., M.D., M.S., F.R.C.P.,
 From the Walter and Eliza Hall Institute, Melbourne.

THE genus *Latrodectus* is very widely distributed, occurring in Europe, Asia, North and South America and Australasia. In Europe it is represented by *Latrodectus 13 guttatus* and *Latrodectus erebus*; in America by *Latrodectus mactans*, *Latrodectus geometricus* and *Latrodectus curacavensis*; in Madagascar by *Latrodectus menovadi* and in Australia, New Zealand, Papua, the South Pacific Islands, India and Malaysia by *Latrodectus hasseltii*.

In Australia these spiders are found under the bark of dead trees, in wood heaps, in empty tins, under stones and old sheets of galvanized iron and in dark corners, as for example, under the seats of earth closets in country districts. They are widely prevalent and appear to be most numerous in hot, dry seasons.

The venomous nature of spiders of this genus has long been recognized, though there have not been wanting authorities who have regarded the effects of the bite as negligible. Marie Phisalix (1922) and Brazil and Vellard (1925) have given historical surveys of the reported effects of the bite of *Latrodectus* and of the experiments which have been performed on animals both by the injection of venom and by the natural bite of various species of this spider. The facts I briefly present are mainly derived from these two sources.

Musgrave (1927) has briefly summarized the literature concerning cases of bite of *Latrodectus hasseltii* in Australia.

Latrodectus 13 Guttatus.

In 1794 Luigi Totti observed the effects of the bite of *Latrodectus 13 guttatus*. The symptoms were tremor, shivering, intense pain, delirium, convulsions, retention of urine and intestinal disturbances. Sometimes there was paralysis of the lower limbs. Recovery usually took place following severe diaphoresis, but convalescence was often prolonged. Totti describes the death of a child of five years in less than twenty-four hours after the bite of this spider.

The first experiments on the venom of this spider were also made by Totti. A fowl bitten each day

for four days by the same spider was severely affected, but recovered in about three weeks. A pigeon died in eight days after a bite and a dog had severe symptoms, but recovered. The symptoms observed in birds were convulsions and muscular weakness and in the dog tremors, collapse and anorexia.

Raikem (1837) caused five spiders to bite a rabbit which became profoundly collapsed and died next day with convulsions. Another rabbit bitten by a spider died on the sixth day and a third presented no symptoms and survived.

Kobert (1888) used an extract of the whole spider and found it toxic for various animals. Bordas (1905) allowed himself to be bitten on the thumb and observed swelling and redness locally with stiffness and pain in the joints of the fingers and thumb, numbness of the palm of the hand and sharp shooting pains which disappeared after some hours, but reappeared from time to time during some days. There were no general effects.

Latrodectus Erebus.

In 1855 Motschulsky and Becker attributed the death of 70,000 sheep in Southern Russia to the bite of this spider. In 1870 Schtschensnowitsch recorded the death of two among forty-eight persons bitten by this species, and also of camels, horses and sheep. The symptoms in man were acute pain, great depression, hypothermia, palpitation, cramps and sometimes tetanic convulsions. There was no local reaction. Death sometimes occurred on the second or third day. Convalescence in those patients who recovered, was tedious, occupying from two or three weeks to several months.

Latrodectus Mactans.

In 1892 Puga Borne in Chile attributed to the bite of this spider the deaths of horses, sheep and other animals. Cerutti in 1910 studied the symptoms produced by the bite in man. In ten years he observed more than one hundred cases near Buenos Ayres. There were no fatalities in his series. Local reaction was absent. Some minutes after the bite there were violent general pains, a sensation of fatigue with præcardiac oppression, tremors and continuous movements, hypothermia and dyspnoea. The respiration rate was 45 to 50 per minute and the pulse 60 per minute and normal in force and rhythm. The reflexes were exaggerated and the urine scanty. There was no vomiting. After twelve to twenty-four hours there was abundant perspiration and the symptoms abated in three or four days. Guzman in Chile observed mental disturbances, hallucinations, nervous tremors and local convulsions following the bite of this spider.

Kellog in 1915 recorded the case of a man bitten on the penis. Within ten minutes there was intense pain with clonic contractions in the muscles of the limbs and abdominal wall. There were tachycardia, dyspnoea and congestion of the face. The pupils were dilated. The wounded organ became swollen

and purple in colour. The patient was much better after twenty-four hours and quite well in three days.

One of the most interesting cases of bite is that of Baerg (1922) who, holding the spider in his hand, allowed it to bite him. The initial pain was acute but transitory. After an hour the site of the bite was purple and covered with drops of moisture. In the second hour the pain became severe and extended to the arm. After four hours he had to go into hospital. He had severe pain for two days with slight delirium and profuse perspiration. He was able to leave hospital on the fourth day, but for some days afterwards suffered from attacks of local pain and slight pyrexia.

Bogen (1922) has analysed one hundred and fifty American cases of bite by *Latrodectus mactans*. For treatment he advocates the use of serum from patients who have recovered.

A good deal of experimental work has been done with this spider, the most important of which is that of Houssay and his colleagues (1917) and of Escomel (1919). In Houssay's experiments guinea-pigs were killed acutely in 35 to 75 minutes following natural bite. They exhibited uneasiness, agitation tremors and hyperæsthesia and their coats were ruffled. Paralysis, notably of the hind limbs, then appeared. The most striking of their later symptoms were obstructive cough, dyspnoea, cyanosis and failure of respiration with terminal convulsions. When the thorax was opened, the heart was found beating, the blood was fluid and the lungs were swollen and pale like those seen in animals dead of acute anaphylaxis as described by Auer and Lewis. Death appeared to have resulted from bronchospasm. Rabbits were found to be much more resistant. Dogs showed prostration and paresis, tremors and vomiting, but recovered.

Houssay's experiments with extracts of venom glands were similar, but less striking than the results of natural bite.

Escomel observed slightly different symptoms in guinea-pigs. A stuporose condition appeared early. The respirations were hurried and the animal gave frequent squeals as though in pain. There was local swelling at the site of the bite. The pupils were contracted and salivary secretion increased. Later paresis of the hind limbs appeared. A second bite in animals which had recovered caused only slight symptoms.

Latrodectus Hasseltii.

A number of bites by *Latrodectus hasseltii* has been recorded in Australia and New Zealand and the symptoms appear to resemble closely those following bites by other species of the genus. There is a rapid onset of acute pain commencing in the bitten part and extending to the limbs and body, associated with profuse sweating. There is weakness, numbness and sometimes paralysis of the limbs. Tremor is infrequent. Delirium and restlessness may be present. The cold clammy sweat, pallor, faintness and nausea indicate a profound effect on the vaso-

motor system. Local reaction is not striking in most of the reported cases. The acute illness lasts for one to three days and is not fatal in adults. Convalescence is slow and various skin rashes may appear during its course.

An excellent brief description of the symptoms following the bite of this spider is given by Dr. E. M. B. Vance in a letter to THE MEDICAL JOURNAL OF AUSTRALIA of January 28, 1928. Cleland lists the reported cases up to 1916. Descriptions of the symptoms following the bite of the "Katipo" are to be found in the *Transactions of the New Zealand Institute* in papers by Wright, Buller, Powell and Fyffe.

Little appears to have been done in the experimental investigation of the venom of this species. Tidswell (1906) recorded a few experiments in which he allowed spiders to bite rabbits and mice. In seven rabbits no symptoms other than local swelling, congestion and oedema were observed. A mouse bitten on the hind quarters was very ill next day. It sat quietly and did not eat its food. On the second day there was paresis of the hind limbs, but except for the local lesion it had quite recovered by the fifth day.

Negative results in such experiments are without significance, since the spider may bite without injecting venom and since the conditions for a natural bite must be fulfilled. A spider cannot bite naturally when held in the hand. In the experiments recorded here the spider was placed in an inverted medicine glass on the shaven skin of the abdominal wall and allowed sufficient room to get into its normal biting attitude. The animal used for experiment always gave evidence of the moment at which the bite occurred (for example by sharp contraction of the abdominal muscles). The spider was left in the biting position usually for some minutes until it ceased to bite. The results in guinea-pigs show that under these conditions venom is usually injected. Experiments were made both with freshly caught spiders and with some kept from April 17 to July 8 in my laboratory. The average temperature in the room was 15° C. The mortality among the spiders was very small, though they were in corked glass tubes and were fed with flies only once during this period. One large female was kept in a test tube plugged with cotton wool and was provided with a beetle which it killed and fed upon from time to time.

The Results of Natural Bite.

Of six guinea-pigs from 250 to 300 grammes weight bitten once through the abdominal wall, five died. Two were bitten by freshly collected spiders and died in less than eighteen hours and four were bitten by spiders kept in the laboratory. Of this last group three died in four and three-quarters, five and three-quarters and twenty-two hours respectively and one survived without symptoms. Within an hour the two animals which died acutely, were obviously very ill. The punctures were visible as

two red dots within an hour after the bite and later became purple. The animals' coats were ruffled and they were cold, shivering and weak in the hind limbs. There were dyspnoea and obstructive cough. They became collapsed. Their hind limbs were paralysed and their body temperature fell. There was increased secretion either of saliva or of fluid from the respiratory passages causing the snout to be wet. The other animals which died, showed similar symptoms, but these were later in onset and less dramatic.

Post Mortem Changes.

The post mortem changes were hæmorrhages in the lungs which were otherwise pale and swollen, filling the thorax and failing to collapse when the chest wall was opened. The blood was fluid and its clotting time normal, from three to four minutes. The intestines were congested. There was no striking local lesion at the site of the bite.

These symptoms and post mortem findings are extremely like those observed after the bite of *Latrodectus mactans* by Houssay and his colleagues.

Rabbits.

Only three experiments were made on rabbits. Two rabbits, weighing 1.8 and 2.0 kilograms, were bitten on the abdominal wall, each by a large female spider. They went off their food for a day, but beyond this showed no symptoms. Another rabbit of 1.9 kilograms was bitten by six female spiders and one male spider on the abdominal wall, the spiders being allowed to bite one after another in the course of three-quarters of an hour. This animal was also practically unaffected.

These few experiments confirm Tidswell's results and show that the rabbit is refractory to the venom of *Latrodectus hasseltii* as it is to that of *Latrodectus mactans*.

Experiments with Saline Extracts of the Head and Prothorax of Spiders.

I have not attempted to collect venom from these spiders on account of their small size and I shirked the task of dissecting out the venom glands from a large number of spiders so as to make extracts of the glands alone.

The spiders in large numbers, one hundred or more at a time, were caught for me at Laverton by Mr. Tom Eades and brought alive to the laboratory, each in a small glass tube. Not realizing that they could be kept in these tubes for months without much loss of venom, I killed most of them at once with chloroform and cut off the head and prothorax from the body. These were dried *in vacuo* over calcium chloride and when dry were powdered finely and redried. Dr. Burnet brought back from Traralgon in Gippsland about one hundred heads which had been dried in a small field desiccator which I designed for the purpose, and Dr. H. O. Lethbridge sent me heads in equal parts of glycerin and physiological saline solution

from Narrandera. The weight of a known number of dried heads was determined and extracts in saline solution were made of this material as required. Only the soluble portion was injected into animals, the insoluble matter being centrifuged down from the extract before injection.

The results of the subcutaneous injection of extracts of heads in guinea-pigs of from 250 to 300 grammes are shown in Table I. The extracts contained the soluble matter from five heads per cubic centimetre.

TABLE I.
The Results of Subcutaneous Injection in Guinea-pigs.

Number of Animals.	Extract Used.	Dose Equivalent in Heads.	Result.
2	Glycerin	3.0	Both died in less than 21 hours.
2	Glycerin	1.0	Both survived.
2	Saline solution	5.0	Both died in between 8 and 19 hours.
2	Saline solution	2.5	Both died in between 8 and 19 hours.
4	Saline solution	2.0	Two died in 21 and 22 hours respectively and two survived.
4	Saline solution	1.0	Two died on the third day and two survived without symptoms.
2	Saline solution	0.5	Both survived without symptoms.

These results show that the soluble matter extracted from two heads is somewhat less potent than the venom injected at a single natural bite. The symptoms and the post mortem findings in those animals which died, were, however, identical with those observed in the less acute deaths following natural bite. Failure to extract all the venom, adsorption to insoluble matter centrifuged down out of the extract, deterioration or excessive dilution of the venom or, finally, the presence of some antagonistic substance in the extracts must be invoked to explain this result.

There is evidence that the coelomic fluid of some spiders antagonizes their venom, though Brazil and Vellard found no such effect with extracts of the venom glands of *Ctenus ferus* to which spider "serum" was added. Dilution of the venom, though it doubtless plays a part in reducing the toxicity of extracts, is not so important in the case of venoms which are predominantly neurotoxic, like that of *Latrodectus*, as in that of those which have a powerful local action causing sloughing in and around the region of the bite. Spider venom from other species has been shown to withstand drying, but failure to extract all the venom or adsorption to insoluble matter is doubtless the most important factor in determining the less potent action of extracts. Brazil and Vellard were able to overcome this difficulty by the use of lime water for extraction, but the venom of *Latrodectus hasseltii* rapidly deteriorates in weakly alkaline solution.

By the injection of extracts into the jugular vein under local anæsthesia it was possible to obtain more acute symptoms and the picture presented by

guinea-pigs injected in this manner (Protocols I and II) closely resembled the effects of natural bite.

PROTOCOL I. A guinea-pig, weighing 415 grammes, received by intravenous injection extract equivalent to two heads. Within three minutes there was obstructive cough, obvious difficulty in breathing and the head was lifted up in the effort to make the intake of air easier. The animal was restless and hyperæsthetic and made sudden "starting" movements. There was no obvious cyanosis. After an hour the dyspnoea was more severe and from this time there was increasing respiratory distress and cyanosis terminating in death from asphyxia two hours and nine minutes after the injection.

PROTOCOL II. A guinea-pig, weighing 400 grammes, received by intravenous injection extract equivalent to 0.8 of a head. After three minutes the animal became restless and excited. It was constantly on the move and tried to keep its head out of the light. It made a continuous chattering sound. After seventeen minutes there was obstructive cough. The coat was ruffled and the animal was tremulous and chattering, and was definitely hyperæsthetic. After one and a quarter hours its symptoms became predominantly respiratory, with obstructive dyspnoea and cyanosis. Death occurred two hours and thirty-seven minutes after the injection.

At autopsy both these animals were found to have pale distended lungs like those seen in guinea-pigs dying acutely of anaphylactic shock. In addition the small intestine was very congested with blood stained fluid in its lumen. The blood was fluid and the clotting time normal, from three to four minutes.

The obvious fallacy in these experiments is the well known fact that extracts of body tissues of spiders are highly toxic for animals, the eggs in females being particularly so. I have crushed up the bodies of female spiders with *Kieselguhr* so as to permit of rapid drying and extracts of this material injected subcutaneously are highly toxic to mice and guinea-pigs, though the symptoms do not resemble those caused by the natural bite. The results of the injection of extract of "body" in guinea-pigs was very different according to whether it was administered subcutaneously or intravenously. Subcutaneously doses equivalent to two bodies caused death in sixteen to twenty-four hours with intense hæmorrhagic œdema of the abdominal wall spreading from the site of the injection, wet pleural and peritoneal surfaces and multiple hæmorrhages in the lungs. The results of intravenous injection appeared to depend upon the size of the animals. Large animals died with symptoms of collapse and without obvious obstructive symptoms, the symptoms being like those described in Protocol III.

PROTOCOL III. A guinea-pig, weighing 375 grammes, received by intravenous injection extract equivalent to 0.2 of a body. Within three minutes the animal appeared to be collapsed. There was no dyspnoea nor other respiratory symptom. There were no twitchings or tremors. Death took place in seven and a half minutes. At autopsy the lungs collapsed normally when the thorax was opened. The blood in the heart and vessels was fluid and there was no evidence of asphyxia. Blood removed from the left side of the heart was bright in colour and the clotting time was delayed. There was no obvious hæmolysis in the serum which exuded from the clot. There were no other gross pathological changes.

Smaller animals died rapidly with symptoms which were more definitely obstructive in type, commencing immediately after the injection and progressing rapidly to death. The symptoms in

these were not essentially different from those seen in acute, anaphylactic shock. The lungs, however, were not so distended as following the injection of extract of heads and tended to collapse when the thorax was opened. There were small hæmorrhages scattered through them. The blood was fluid and the clotting time four to five minutes. The weights and death times of these animals are set out in Table II.

TABLE II.
Effect of Intravenous Injections of Extracts of the Bodies of *Latrodectus hasseltii* in Guinea-pigs.

Weight of Animal in Grammes.	Dose Equivalent in Bodies.	Results.
293	0.4	Immediate jerky movements as from asphyxia—collapse. Death in 5 minutes. Both lungs partly distended.
337	0.2	Collapse—slight obstructive symptoms. Death in 15 minutes. One lung only partly distended.
270	0.2	"Starting" movements from asphyxia, obstructive cough—collapse. Death in 31 minutes—lungs incompletely collapsed.
375	0.2	Protocol 3. Death in 7½ minutes.

A further study of these phenomena was made in guinea-pigs in which the brain was destroyed under full ether anæsthesia, and in which extracts were injected into the jugular vein after the anæsthetic had been blown off by artificial ventilation and the thorax had been opened to observe directly the effect on the heart and lungs. Typical experiments are presented in Protocols IV and V.

PROTOCOL IV. A guinea-pig, weighing 765 grammes, was used.

4.21 p.m.—Under anæsthesia a tracheal cannula was tied in and the brain was destroyed by pithing. The thorax was opened under artificial respiration, 84 per minute.

4.51 p.m.—Extract equivalent to four heads of *Latrodectus hasseltii* was injected intravenously.

4.58 p.m.—Bronchial constriction was evident. The lungs were fully distended and not collapsing.

4.59 p.m.—Asphyxia was becoming evident, with twitching and struggling movements.

5 p.m.—Asphyxia was abolished by increasing the amount of air delivered at each stroke of the pump; the rate was still 84.

The preparation was thus maintained moderately well oxygenated till 5.50 p.m., when the heart failed. In similar experiments bronchial constriction did not always appear so early, but unless the stroke of the pump was at once lengthened, asphyxia caused rapid heart failure.

The effect of injection of extract of "bodies" is seen in Protocol V.

PROTOCOL V. A guinea-pig, weighing 882 grammes, was used.

3.50 p.m.—Under ether anæsthesia a tracheal cannula was tied in; the brain was pithed, artificial respiration at 88 per minute was established and the thorax opened.

4.22 p.m.—One-fifth of a cubic centimetre of extract equivalent to 0.8 of a body was injected into the right jugular vein. There were no obvious immediate effects.

4.33 p.m.—A second dose of 0.2 cubic centimetre of extract, equivalent to 0.8 of a body, was injected.

4.40 p.m.—The heart was beating very feebly, the right side being overfilled with blood.

4.43 p.m.—The heart failed. On stopping the artificial respiration the lungs immediately collapsed.

These experiments demonstrate the difference in action between extracts of the heads and those of the bodies of the spiders. Extracts of the heads, like the unadulterated venom, cause death in the guinea-pig from bronchial constriction and those of the bodies in large doses appear to act on the heart, causing rapid failure. In smaller guinea-pigs in which obstruction is more easily demonstrated, the difference between the toxic actions of the two extracts is not so clear, since extract of bodies also causes obstructive symptoms.

Since bronchial constriction may under certain circumstances be a feature of the action of both kinds of extract, it seemed possible that this might be due to some histamine-like substance. The extracts were therefore tested on the isolated uterus of the guinea-pig and both were found to possess a stimulant action. Extracts of heads in doses equivalent to one head (3.4 milligrammes of dry material) in a fifty cubic centimetre bath caused rather more than half the maximal contraction and extracts of body in dosage equivalent to 0.1 body (2.5 milligrammes of dry material) gave a similar result. Repeated doses showed no desensitization of the plain muscle to this action nor was the subsequent response to Australian snake venom affected.

The extracts were further tested on the uterus of the virgin rat. Both were found to cause contraction which with the soluble material from 3.75 heads (2.8 milligrammes of dry material representing one head) and from one body (25.8 milligrammes of dry material) in a bath of fifty cubic centimetres was maximal. Histamine in a dose of 0.1 milligramme caused relaxation, though this was not maximal.

A few observations were also made of the effect of the injection of extracts of heads in other species. Of four mice which received extract equivalent to two heads subcutaneously, three were paralysed in the hind limbs within twenty-one hours and one died on the second day. The glycerin extracts were not suitable for testing on mice, since glycerin is highly toxic for this species.

Injection of the equivalent of six and eight heads intravenously into rabbits caused no definite symptoms, but in one rabbit the injection of extract from ten heads caused dyspnoea, restlessness, collapse and death in less than eighteen hours. *Post mortem* there was hæmorrhage in the lungs and the intestines and adrenals were congested. In all the animals which died, there was no evidence of any obvious change in the clotting time.

Miss F. E. Williams has made some observations on the effects of these extracts on the coagulation of citrated plasma and on their hæmolytic power. The extracts from which dilutions were made for these experiments, contained the soluble material from 51.6 milligrammes of dried bodies (equivalent to two bodies) per cubic centimetre and 17 milligrammes (equivalent to five heads) per cubic centimetre of saline solution.

In the first tube in both hæmolytic and coagulation tests 0.2 cubic centimetre of body extract was used (equivalent to 0.4 of a body) and in the remaining tubes 0.1 cubic centimetre of successive doubling dilutions of the original extract. In the series with "head" extract 0.2 cubic centimetre of the original extract (equivalent to one head) and in the remaining tubes 0.1 cubic centimetre of doubling dilutions of the original extract were used.

In the coagulation tests 0.2 cubic centimetre of citrated plasma of guinea-pig, rabbit, sheep, horse or man was added to each tube. The plasma was made by the admixture of freshly shed blood with an equal volume of 2% sodium citrate in physiological saline solution. The red blood corpuscles were spun and washed by repeated centrifugation three times for use in the hæmolysis tests.

Results of Coagulation Tests in Vitro.

Even with the soluble material from 0.4 of a body or from one head no coagulation *in vitro* was observed with any of these citrated plasmas. The possibility of anticoagulant activity in these extracts was therefore investigated by Lamb's method incubating the plasma with varying dilutions of the extracts for one hour and then measuring the coagulation time on the addition of that amount of calcium chloride (1%) which caused rapid coagulation in control tubes of 0.2 cubic centimetre of plasma with 0.1 cubic centimetre of saline solution also incubated for one hour at 37° C. The results of these tests are set out in Table III.

TABLE III.
The Anticoagulant Power of Extracts of *Latrodectus hasseltii*.

Dose of Extract.	Coagulation Times after the Addition of Calcium Chloride in Minutes with				
	Guinea-pig Plasma.	Rabbit Plasma.	Sheep Plasma.	Horse Plasma.	Human Plasma.
Bodies.					
0	3	4½	5	15	8
0.4	4	10	8	30	20
0.1	4	4½	3	30	11
0.05	4	4½	3	30	9
0.025	4	4	3	32	9
0.012	4	4	3	34	9
Heads.					
0	4½	4½	5	14	8½
1.0	5	12	8	45	40
0.25	4½	11	5	40	38
0.125	4½	11	5	22	27
0.062	4½	10	5	22	27
0.031	4½	10	5	22	27

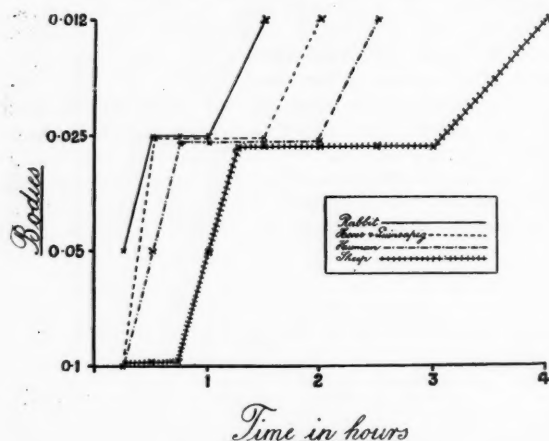
There is a slight anticoagulant effect with both extracts, more developed with extract of heads than of bodies, the difference being most evident with rabbit and with human plasma. It is not, however, sufficiently great nor sufficiently uniform with the plasma of various species to suggest that the venom is anticoagulant in action and observations on the clotting times of animals dying following the bite of the spider do not support the view that the venom has any effect at all on the coagulation of the blood.

The Hæmolytic Action of Extract of Bodies.

The hæmolysis tests, however, afford striking evidence of the difference between the two extracts.

Extracts of heads are devoid of any hæmolytic power in the range of doses tested, while extracts of bodies, as is the case with other spiders of this genus, have a powerful hæmolytic action. The hæmolysis tests were carried out in a volume of 0.3 cubic centimetre containing (except in the first tube in the series) 0.1 cubic centimetre of extract, 0.1 cubic centimetre of saline solution or of guinea-pig serum, diluted to one part in three, and 0.1 cubic centimetre of 3% washed red blood corpuscles. The tubes used in these tests as well as those in the coagulation tests were specially cleaned by boiling in *aqua regia*. They were subsequently washed in distilled water and dried in the hot air oven.

The results are shown graphically in Figure I. In fifteen minutes extract equivalent to 0.4 and 0.1 of a body had caused complete hæmolysis with all the red blood corpuscles tested. With horse, guinea-



pig and human red cells there was partial hæmolysis with extract equivalent to 0.05 body and with rabbit red blood cells hæmolysis at this dilution was complete. In a half hour with all the red cells save those of man and the sheep hæmolysis was complete to 0.025. With human red blood cells it was partial at this dilution and with sheep it was still incomplete with extract equivalent to 0.05 of a body. In two hours guinea-pig, rabbit and horse red blood cells had hæmolysed with 0.012 body, with human red blood cells hæmolysis was incomplete at this dilution and with sheep cells there was no further hæmolysis beyond that in a dilution equivalent to 0.025 of body which was complete at one and a quarter hours. The addition of complement before incubation (guinea-pig serum diluted to one volume in three) inhibited hæmolysis, which after four hours had occurred only with 0.4 of a body in the case of human, guinea-pig and horse red blood corpuscles. With sheep and rabbit red blood corpuscles this inhibitory effect was not so evident, hæmolysis after four hours with sheep cells

being complete with 0.05 of body and incomplete with 0.025. With rabbit cells the rate of hæmolysis was delayed, but after four hours there was some hæmolysis even with 0.006 of body.

Conclusions.

1. *Latrodectus hasseltii*, like other species of this genus, is venomous and causes symptoms following the natural bite in guinea-pigs similar to those observed by Houssay and by Escomel with *Latrodectus mactans*.
2. The rabbit appears to be moderately resistant to the venom of this spider as it is to that of some other species of the genus *Latrodectus*.
3. Extracts of the head of this spider produce symptoms in guinea-pigs similar to those observed following the natural bite.
4. Bronchial constriction plays a dominant rôle in death in guinea-pigs following the bite of this spider.
5. Extracts of bodies of these spiders, like those of *Latrodectus mactans* and *Latrodectus 13 guttatus*, have a powerful hæmolytic action.
6. There is no evidence from these studies of any effect of the venom of this spider on the coagulation of the blood.
7. The symptoms in animals following natural bite suggest that the venom has a neurotoxic action.

Bibliography.

- E. Bogen: "Arachnidism," *Archives of Internal Medicine*, 1922, Volume XXXVIII, page 623.
- V. Brazil and J. Vellard: "Contribuição ao estudo do veneno das aranhas," *Memorias do Instituto de Butantan*, Volume II, 1925.
- W. Buller: "On the Katipo or Venomous Spider of New Zealand," *Transactions of the New Zealand Institute*, 1870, Volume III, page 29.
- J. B. Cleland: Sixth Report of the Government Bureau of Micro-biology, 1915.
- Fyffe: "The Bite of the Katipo," *Transactions of the New Zealand Institute*, 1901, Volume XXXIII, page 436.
- A. Musgrave: "Some Poisonous Australian Spiders," *Records of the Australian Museum*, October 7, 1927.
- M. Phisalix: "Animaux Venimeux et Venins," Paris, 1922.
- L. L. Powell: "On *Latrodectus*, the Poisonous Spider of New Zealand," *Transactions of the New Zealand Institute*, 1870, Volume III, page 56.
- F. Tidswell: "Researches on Australian Venoms," Sydney, 1906.
- F. W. Wright: "On the Katipo, a Poisonous Spider of New Zealand," *Transactions of the New Zealand Institute*, 1869, Volume II, page 81.

CYTOLOGICAL OBSERVATIONS OF A LUMSDEN RAT SARCOMA.

By E. S. HORNING, M.A. (Oxon), D.Sc. (Melbourne),

AND

K. C. RICHARDSON, M.Sc. (Perth),

From the Cancer Research Committee, University of Sydney.

DESPITE many recent cytological observations upon various strains of sarcomata, when cultivated

in vitro, a great deal of controversy still exists concerning the individual cellular elements composing these neoplasms. Accordingly the authors have attempted to elucidate these controversies by cultivating a Lumsden rat sarcoma *in vitro*.

Throughout this investigation the hanging-drop technique was employed. Minute fragments of the tumour were selected that were free from the normal tissues of the host, and were cultivated in a medium of chick plasma or rat plasma with chicken embryonic extract obtained from embryos of seven days' incubation. Equal volumes of plasma and embryonic extract were employed. The preparations were then incubated at 38.5° C. for a period of twenty-four hours.

When investigations *in vivo* were necessary, the explants were placed on a Hearson warm stage maintained at body temperature.

Special attention has been paid to the centring of the objectives and the adjustment of the source of illumination. In order to avoid distortion of the cell types due to pressure, the cultures were sealed to a concavity slide.

While the general appearances of the growth *in vitro* were observed, it was noticed that radial migration of the cells from the explanted neoplastic tissue was detected after only seven to nine hours' incubation, while after twenty-four hours' incubation the original tumour fragment became surrounded by a broad zone of cells which presented an admirable field for the cytological study of the individual cellular components. The appearance of the cultures was found to depend largely upon whether they were cultivated in a medium consisting of rat or chick plasma. The explants grown in the former medium presented a much more compact appearance than those cultivated in the latter and the general growth in rat plasma is much greater and with a healthier appearance of the individual cells.

When the living cultures were first examined under the high powers of the microscope three cell types were revealed in the cellular elements composing the area of new growth and compared favourably with those seen in cultures fixed after various intervals of growth.

The first type which greatly predominates in numbers, corresponds to the fibroblast-like elements already described by several authors. The second type represents the sarcoma cell proper and a final, highly amoeboid type is similar in appearance to the clasmatocyte already depicted by several authors.

An examination of the fibroblast-like elements showed that they vary in form and size and that the fully grown fibroblasts appear to be bifurcated in the direction in which they happen to be migrating. This phenomenon was found to be a specific morphological character pertaining to this type of neoplastic fibroblast, while the young fibroblasts appear to be either oval or spindle shaped.

The sarcoma cells appear to be spherical or oval in outline, but the majority is found to be in a spherical condition. Cytological differences were detected between the nuclei of the sarcoma cells and pseudofibroblasts.

The wandering cells or clasmatocytes appeared in smaller numbers in all cultures and presented a striking contrast when compared with the other cellular elements. When examined in the living condition they displayed more active movement and were observed to throw out pseudopodia simultaneously in a very diverse manner.

An examination of preparations fixed after twenty-eight hours' growth *in vitro* shows many intermediate cell types between the round sarcoma cells and the young pseudofibroblasts and the possibility at once suggests itself that the pseudofibroblasts are morphological variations of the tumour cells and not generically separate types. As this investigation *in vivo* afforded an excellent opportunity to determine the nature and origin of these intermediate cell types, detailed observations were made and the appearance of these living cells as well as their behaviour during the transitional stages are recorded by a series of microphotographs (see Figures I and II).

The authors, while studying a mouse sarcoma (37C) *in vitro*, observed a similar phenomenon, but owing to technical difficulties were unable to record this effect by means of photography.

The round sarcoma cell which was about to be transformed into a pseudofibroblast, gradually became fusiform by sending out finger-like processes from one or other end, which generally adhered to the under surface of the cover glass. At intervals the pseudopodia were seen to withdraw and fresh processes were again sent out and, as the body of the cell became more elongated, the pseudopodia increased in thickness and length and very often reached across the field of vision. Thus gradually the tumour cells were observed to assume the structure and appearance of the fibroblast-like element so characteristic of the sarcomata when cultivated *in vitro*. The authors have described at length elsewhere the behaviour of the nucleus as well as that of the cytomicrosomes during this transitional stage.

The result of this investigation upon the behaviour and appearance of the sarcoma cells *in vitro* strongly suggests that a histogenetical relationship exists between these two cell types.

These conclusions are based upon the behaviour and appearance of these living cells *in vivo*, namely, that the pseudofibroblasts are apparently morphological variations of the sarcoma cell. Carrel and Ebeling, while working upon a Jensen rat sarcoma, succeeded in isolating a pure strain of fibroblasts from the neoplasm. These cells after cultivation *in vitro* for certain periods give rise to tumours when inoculated into normal healthy rodents.

Cytological differences are also detected in the aspect of the general protoplasm between the normal and neoplastic cells.

LIGATURE OF THE INTERNAL JUGULAR VEIN ABOVE THE POSTERIOR BELLY OF THE DIGASTRIC MUSCLE.

By E. S. MEYERS, M.B., F.C.S.A.,
*Honorary Surgeon, Brisbane Hospital; Lecturer in
Anatomy, Joint Board of Dental Studies,
Brisbane.*

THE operation the steps of which are illustrated
in the accompanying diagrams, was first conceived

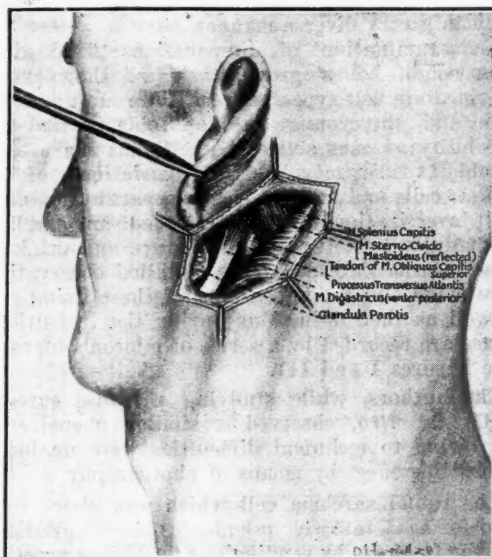


FIGURE I.

as an academic exercise. To me it has subsequently
proved to have a distinct field of usefulness in head
and neck surgery.

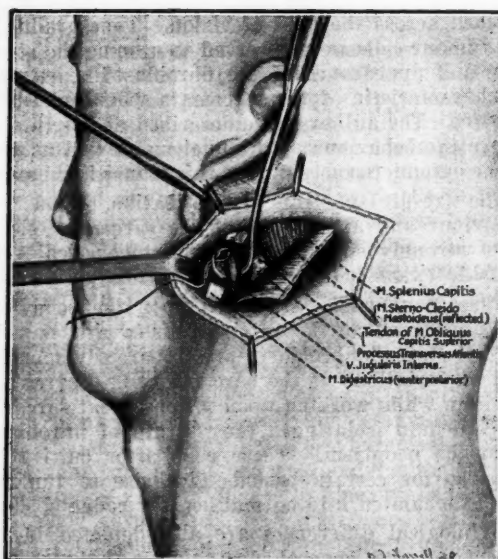


FIGURE II.

The first part of the operation—detachment of
the sterno-mastoid muscle from its origin—per-
formed at an early stage of the operation of "block"
dissection of the neck, has simplified this procedure.
It is no longer necessary to work in an awkward
angle between the ramus of the jaw and the sterno-
mastoid muscle and ligation of the internal jugular
vein at the base of the skull is rendered less difficult.

This operation may be used as the means of
approach to the tonsil and neighbouring parts and
by such approach radium may be implanted
securely when such achievement is difficult, by
means of the oral route.

A caution is necessary. One must be careful not
to include in the ligature the vagus or hypoglossal
nerves, as they run in a vertical direction between
the vein and the internal carotid artery.

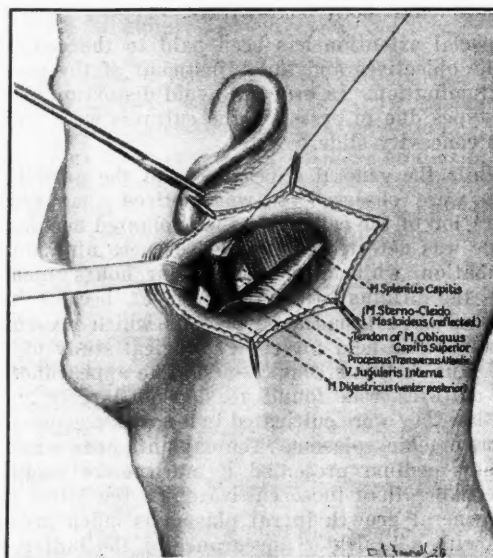


FIGURE III.

Acknowledgement.

My thanks are due to Mr. Farrell and Mr. E.
Bagnall for their help in the preparation of the
illustrations, work done in the Department of
Anatomy, Brisbane.

Reports of Cases.

HEMIPLEGIA DURING LABOUR AND THE PUERPERIUM.

By CECIL COGHLAN, M.B., Ch.M. (Sydney), F.R.C.S.
(England), M.R.C.P.I., D.G.O. (Dublin), F.C.S.A.,
*Honorary Assistant Surgeon, The Women's Hospital,
Sydney; Honorary Assistant Gynaecologist,
Saint Vincent's Hospital, Sydney.*

HEMIPLEGIA is a rare complication of labour or the
puerperium, its immediate causes being those of hemi-
plegia in general, namely, (i) rupture of a cerebral artery,
(ii) embolus, (iii) thrombosis. Not one of these causes
is primary. The first is secondary to an arterial change,
usually associated with nephritis or syphilis, the second

usually to endocarditis and the third to infection or anaemia.

Cerebral hæmorrhages occurring during labour or the puerperium are most frequently associated with the toxæmias of the latter part of pregnancy, with their accompanying rise in the blood pressure and the associated vascular changes. In autopsies on women dying in eclampsia small hæmorrhages are seen both on the surface of the brain and in the brain substance. Normal healthy vessels can well stand the raised pressure in labour, even when this is associated with the high pressure common in eclampsia. For a hæmorrhage to occur an additional factor must be present and this is damaged or weakened walls of the vessels. This occurs in eclampsia, as is evidenced clinically by the generalized oedema, and histologically by degenerative hyaline changes in the vessel walls. Degenerative changes in the walls of the vessels are also produced by nephritis and syphilis.

A hemiplegia, occurring as a result of a cerebral embolism, is usually secondary to an endocarditis and is an incident in that disease rather than a complication of childbirth, but cases have occurred in which the emboli have apparently reached the brain from pelvic thromboses resulting from puerperal sepsis. How such an embolism can pass through the pulmonary capillaries to reach the brain has not received a satisfactory answer beyond the supposition that it is side-tracked through a patent *foramen ovale*. Another explanation is that it is a secondary embolus following a primary embolus in the lung.

Hemiplegia from cerebral thrombosis is associated usually with a puerperal infection which may be of a very mild type. In puerperal infection all the elements needed for thrombus formation are present—thrombokinase from necrotic tissues, organisms to cause inflammatory trauma to the vessel walls and a sluggish circulation.

Diagnosis.

In cerebral hæmorrhage the onset is sudden, usually during labour and associated with some condition such as a pregnancy toxæmia, nephritis or syphilis. Coma is severe. In cerebral embolus the onset is sudden during labour or in the puerperium and it is associated with an endocarditis or a pelvic thrombosis. The coma is shorter and less severe than in cerebral hæmorrhage. In cerebral thrombosis the onset is late, one to three weeks after labour, and is associated with prodromal symptoms such as headaches, *paræsthesia et cetera*. The hemiplegia develops gradually and may be associated with remissions.

Case Report.

L.M., aged thirty-seven years, was admitted to the Women's Hospital, Sydney, on March 7, 1928. She had had one previous pregnancy which had proceeded normally. During her second pregnancy she had been carefully observed and up to the onset of her labour had had no albumin in her urine. Labour had proceeded normally to the later part of the second stage when she had a convulsion which was followed by coma. The second stage was completed with forceps, a live and healthy child being delivered. At no time during labour had pituitary extract been given. On the completion of her labour she was in deep coma, her breathing was stertorous, the left side of her face and her right arm and leg were flaccid. There was no response to tendon reflexes on the right side, but the plantar reflex was a slight extensor response. The pupils were small, equal and reacted to light. The organic reflexes were absent. The pulse was 115 and the temperature 37.8° C. (100° F.). A catheter specimen of urine contained "one-twelfth albumin." The systolic blood pressure was 120 and the diastolic 75 millimetres of mercury. The spinal fluid was turbid. The temperature became normal on the second day and the urine free of albumin on the third. After the third day consciousness gradually returned and on its return a motor aphasia was disclosed. When she was asked to write with her left hand she did so, but in mirror fashion. Hearing and sight were unaffected. The puerperium proceeded normally and in the third week she was transferred to a general

hospital. At this stage she had recovered the organic reflexes and could move her right leg, but the paralysis of the right arm and the aphasia were still complete. The Wassermann test yielded no reaction.

Comment.

The interest in this case lies in the occurrence of a severe cerebral hæmorrhage unassociated with a pregnancy toxæmia, nephritis or syphilis. The blood pressure was low and had not been artificially raised by the administration of pituitary extract. There had been no previous illness and there was no family history of nephritis or apoplexy. There must be assumed, however, the presence of a congenital arterial weakness.

The records of the Women's Hospital contain no other case of this complication of labour or the puerperium during the previous fourteen years (1914-1928).

Conclusions.

1. Hemiplegia is a rare complication of labour or the puerperium.
2. If hemiplegia occurs during labour, it is due to a cerebral hæmorrhage and is secondary usually to a nephritis or to syphilis.
3. If it occurs during the puerperium, it is due to embolus or thrombosis.
4. The case reported shows that it may occur without any predisposing cause.

FOUR CASES ILLUSTRATING THE RÔLE OF SEPSIS IN ILL HEALTH.

By A. M. WATKINS, M.B., B.S. (Melbourne),
Roseville, New South Wales.

CASE I. M.H., a female, aged seven years, was brought to me by her mother who stated that for the past three winters her child had been treated for recurrent whooping cough. She had not derived the slightest benefit from the various treatments she had undergone, including a course of vaccine treatment and her mother stated that she did not wish her child to suffer for another winter if it were possible to prevent it. On examination the child was an alert, vivacious subject with habit spasm and of the introspective type. A few rhonchi were present anteriorly in the chest, but no gross signs of pulmonary mischief could be detected. The cardiac examination revealed no disease and the throat was very healthy, but on examination of the naso-pharynx a collection of adenoid tissue was very evident. The stools gave evidence of disturbance of fat metabolism and excess of indigested cellulose was present. The urine was normal. From both ears two plugs of cerumen were removed by syringing and the mother was told to bring the child to me if there was no improvement in the cough. Two days later the mother called to say there was no improvement. I therefore removed the adenoids the following day. Within a week there was a total subsidence of the cough and the child is now quite happy and well.

I take it that the adenoid tissue was a septic focus which during the summer was in abeyance owing to evaporation, but in the winter was unable to be got rid of and used to flow over the pharynx, causing paroxysmal cough and vomiting.

CASE II. A.B., a female, aged forty-two years, consulted me for chronic illness. She had been in various hospitals and finally had been sent to a sanatorium owing to severe bronchitis. She had had attacks of severe colic and at these times passed large amounts of mucus. During the bronchitic attacks her temperature rose to 37.8° C. (100° F.) and no tubercle bacilli had yet been discovered. On examination I could detect no cardiac involvement, but chronic bronchitis was evident in the right base and a large amount of expectoration of greenish-yellow nature

was collected. I decided to have an X ray examination made of the antra and frontal sinuses and the report came back that both maxillary antra were grossly infected. The late Dr. Herbert Marks did a radical operation on both antra and now this patient has lost her cough and looks and feels a different being.

CASE III. X.Y., a male, aged thirty-seven years, consulted me for recurrent attacks of influenza which had been undermining his health for the past five years. On examination the chest and heart and abdomen seemed to be free from disease and the teeth had been recently extracted. His urine was loaded with pus and his temperature was just 37.8° C. (100° F.). I sent him to be examined by X rays, as I was not satisfied with the cranial and facial spaces. The report came back that the left antrum was severely infected. This was opened a radical antral operation done and the improvement was remarkable. He is now well and actively engaged in business.

CASE IV. A mother sent for me to go to see her child, aged ten years, as she had been returned from hospital. She told me that the child's temperature which had been raised whilst she was eight weeks in hospital, was of nervous origin and would subside in time. On examination the child looked an active, robust girl. The pulse was 85 per minute, the temperature was 37.8° C. (100° F.). No abnormality could be detected in the throat, chest or abdomen or on the external surface of the body. I found one of the molar teeth very tender on pressure and I got this extracted at once. Since then the temperature has been quite normal.

These four cases seem to point out how protean is the manifestation of sepsis in the body and yet when once it is found, it makes the linking of diverse symptoms so very clear. The mucous colitis, the pyelitis, the adenitis, the periodic exacerbations of pyrexia were cured when a septic focus was removed.

A DIPHTHERIA-LIKE DISEASE.

By WALLACE KING, M.B., Ch.M. (Sydney),
Honorary Medical Officer to Dungog Hospital.

The following case is of considerable interest in that the child concerned suffered twice within five months from attacks of a disease which could not be distinguished clinically from laryngeal diphtheria, but on neither occasion could any Klebs-Löffler bacilli be detected in throat swabbings.

On March 23, 1929, I was called to see K.M., male, *atatis* two and a half years, whose mother stated that for about a week previously he had been fretful and disinclined to play, but without any definite symptoms till that day, when he had become feverish and developed a "croupy" cough, with noisy breathing.

I found the child presenting the classical appearance of laryngeal diphtheria of moderately severe grade, with laryngeal stridor and cough, with well marked supra-clavicular and infrasternal recession.

The temperature was 39.1° C. (102.5° F.), the pulse 140 and the respirations 40 to the minute, the face was flushed and the child restless. The fauces were injected and scattered patches of greyish yellow false membrane were visible on both tonsils. A soft systolic murmur was heard all over the præcordium. The chest was clear, except that the stridor was audible all over it. The knee jerks could not be elicited.

I made a diagnosis of laryngeal diphtheria and had him admitted to the Dungog Hospital. On admission he was given 20,000 units of diphtheria antitoxin and within the next forty-eight hours his temperature returned to normal, the symptoms subsided and in a few days he was convalescent.

In a throat swabbing taken the morning after admission no Klebs-Löffler bacilli were found and in view of this he was discharged after a fortnight without further swabbing. There were no complications or sequela.

He remained well till July 29, 1929, when I was again called to see him, his mother stating that on that date he had begun to cough, having had a slight cold for the previous few days. I was astonished to find that he presented essentially the same clinical aspect as before, though the attack was not quite so severe as the previous one, the temperature being 38.7° C. (101.8° F.), the pulse 132 and the respirations 34 to the minute. The child was not so distressed as before, the stridor not being very evident until he was disturbed for the purpose of examination. Recession was moderately pronounced, the knee jerks were present but sluggish and the fauces were injected, irregular patches of membrane being present on the left tonsil.

In spite of the bacteriological result I had believed the first attack to be true diphtheria and as there seemed no other alternative I again made a diagnosis of laryngeal diphtheria. He was isolated in his own home and I gave him 9,000 units of antitoxin and sent a throat swabbing for examination. During the next seventy-two hours his symptoms disappeared, his temperature became normal and up to the present he has made an uneventful recovery, except for some photophobia and lachrymation a few days ago. The same result was again obtained from the throat swabbing.

Comment.

Reference to the literature at my disposal tends to show that a primary membranous laryngitis not due to the Klebs-Löffler bacillus is rather a rare condition. I have considered this case worth reporting in view of the recent epidemic at Toowoomba, Queensland, and of the recurrence in the same patient after such a short interval.

I am at a loss to explain the subsidence of the attacks after injections of diphtheria antitoxin. As it has occurred twice, it seems hardly reasonable to ascribe it to coincidence.

Reviews.

THE FEMALE PELVIS.

THAT a second edition of F. A. Maguire's "The Anatomy of the Female Pelvis" should be required gives proof of its usefulness.¹ This edition, as the author states, embodies work he has done since the first went to press; a series of sections of this has been preserved.

The first chapters deal with the bony pelvis, the muscles clothing it, the pelvic fascia and the connective tissue and blood vessels. These are well written and easily understood. The few diagrams here are very schematic and it seems a pity that some of the author's special sections are not made use of and portrayed.

The description of the pelvic peritoneum and uterine supports is lucid and that of the contents of the pelvis and applied anatomy should prove of value to the student.

The book closes with a capable account of physical examination and a "Summary of Gynecological Examination" by Dr. Fourness Barrington.

It should be most useful to the student to have so much valuable information compressed into small space and so clearly recorded and the study of the subject should be much more easy and interesting by its perusal.

THE INJECTION TREATMENT OF VARICOSE VEINS.

THE treatment of varicose veins by injection has come into such general use in the last few years that Dr. Coppelson's small book upon this subject has already entered into its second edition.² The author continues to

¹"The Anatomy of the Female Pelvis: Descriptive and Applied," by F. A. Maguire, D.S.O., M.D., Ch.M. (Sydney), F.R.C.S. (England), F.C.S.A.; Second Edition; 1929. Sydney: Angus and Robertson, Limited. Crown 8vo., pp. 119. Price: 7s. 6d. net.

²"Treatment of Varicose Veins by Injection," by Victor M. Coppelson, M.B., Ch.M., F.R.C.S., F.C.S.A.; 1929. Australia: Cornstalk Publishing Company; Sydney: Angus and Robertson, Limited. Crown 8vo., pp. 66. Price: 5s. net.

favour, as probably does a majority of those who practise injection, the use of a solution of quinine and urethane, but discusses various alternative solutions. The technique of injection is clearly described as well as several small modifications thereof.

The chapter dealing with the treatment of ulceration and eczema is less satisfactory. Humbert's modification of the Unna stocking appears to be unnecessarily complicated and messy and a classical error is repeated in the advice to allow the escape of discharge through a window cut over the ulcer.

In all other respects Dr. Coppleson's book may be commended as a most useful and concise exposition of the subject.

STANDARDIZED TREATMENT.

THE book entitled "The Use of Standard Treatments in the Campaign Against Disease in the Tropics," by J. Neil Leitch, consists of a thesis which was approved for the degree of doctor of medicine in the London University.¹ There is an introduction by Dr. G. Carmichael Low.

The author makes the plea that standard methods of treatment, standard drugs in standard dosage over a definite period of time, should be adopted for certain diseases when large numbers of patients require attention. Standard treatment can only be applied to those diseases the causes of which are known and for which specific remedies are available.

Standard treatment for malaria, amebiasis, kala-azar, ankylostomiasis and cholera are described in detail and histories of patients are given.

The author's views are not based merely on theoretical considerations, as he developed his methods only after a large experience and studied the results of treatment among many hundreds of patients in Assam. The few illustrations are neither good nor relevant and might have been left out with advantage.

The book makes good reading and any tropical medical officer should benefit from an evening spent in its perusal.

THE HEALTH OF THE INDIAN ARMY.

INVESTIGATIONS by British Army doctors in India have yielded results of such value in the advancement of medical knowledge that a history of the health of the British-Indian Army is bound to be of interest.

In his "Army Health in India" Lieutenant-Colonel John Mackenzie reviews the progress made from Elizabethan times through the "good old days of John Company" to the present day.² The transfer of India from Company rule to the British Crown in the year 1758 marked the commencement of a new epoch in health administration. In the following year the first organized inquiry into the health of the army was made. Queen Victoria sent to India a Royal Commission which, supported by Florence Nightingale, reported scathingly on the deplorable conditions existing at that time and recommended among other things the appointment of "properly trained army medical officers of health . . . at the larger stations." Mackenzie quotes freely from the reports of Florence Nightingale and the commission.

¹ "The Use of Standard Treatments in the Campaign Against Disease in the Tropics" by J. Neil Leitch, M.D., B.S. (London), M.R.C.S. (England), L.R.C.P. (London), D.T.M. & H. (England), F.R.G.S., F.Z.S. With an introduction by G. Carmichael Low, M.D., F.R.C.P.; 1929. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 76, with illustrations. Price: 6s. net.

² "Army Health in India: Hygiene and Pathology," by Lieutenant-Colonel John Mackenzie, M.A., M.B., Ch.B., D.P.H.; with a Foreword by Lieutenant-General Sir Matthew Fell, K.C.B., C.M.G., F.R.C.S., K.H.P.; 1929. London: John Bale, Sons and Danielsson, Limited. Demy 8vo., pp. 165, with illustrations. Price: 10s. 6d. net.

"Malaria dominates the health statistics of the British Army at home and abroad" and therefore merits the special attention accorded it. Of malaria Mackenzie writes: "In hieroglyph and rune, incantation and hymn, in fable and poem and story, the chronicle of his felonious career runs through the ages."

The development of India's army health organization is reviewed and the existing methods of administration are described and constructively criticized.

The little book is attractively written, makes pleasant reading and succeeds in creating an appetite for more of a very fascinating story.

GASTROSCOPY.

In his "Technique and Method of Use of Sternberg's Gastroscopy and Gastroscopic Treatment with Sternberg's Cysto-Gastroscopic Apparatus," William Sternberg discusses details of the technique of introduction of the gastroscope, the care of the instrument, preparation of the patient and so on.¹ He apparently takes it for granted that his readers will be familiar with the details of the apparatus and he does not therefore describe it, although on page 13 there appears an illustration depicting an instrument resembling an elongated cystoscope. The author insists that the introduction of this into the stomach by his method is quite easy and states that no anaesthesia or sedative should be administered to the patient. Several photographs illustrate the various positions in which the patient is placed during the operation.

Although treatment is mentioned in the title, there is no description of the therapeutic uses of the gastroscope. The reader's interest is aroused, but important questions are not answered. A fuller discussion of the merits of the method in diagnosis and treatment might have been introduced.

The English employed is often halting and sometimes the meaning is obscure. It is probable that the booklet does not do justice to the method, which should be of great practical use in certain conditions.

THE HEART.

THE study of the heart during the past decade has come into special prominence. In recognition of this fact the editors of Quain's "Elements of Anatomy" decided to issue the chapter on the heart in the form of a separate monograph. The result is "The Heart," by Professor Walmsley.² Issued as a treatise on anatomy one would expect it to embody the many contributions to the purely anatomical aspect of the heart that have been made in recent years. That expectation is fully realized. The comparative anatomy of the heart, its external form, its interior, its structure and its blood supply are fully described and many new facts are brought to light.

But the book is more than an anatomical treatise. The physiology of the heart is intimately related to its anatomy; in no other organ perhaps are function and structure so relative to each other. Evidence of the author's recognition of this fact is apparent throughout the pages of the book. As a consequence it may be read with the greatest advantage by the physician. For example,

¹ "Technique and Method of Use of Sternberg's Gastroscopy and Gastroscopic Treatment with Sternberg's Cysto-Gastroscopic Apparatus," by William Sternberg; 1929. London: John Bale, Sons and Danielsson, Limited. Royal 8vo., pp. 19, with illustrations. Price: 3s. 6d. net.

² "Quain's Elements of Anatomy," Edited by Thomas Hastie Bryce, M.A., M.D., F.R.S., and Thomas Walmsley, M.D.; Eleventh Edition; Volume IV, Part III: The Heart; 1929. London: Longmans, Green and Company. Royal 8vo., pp. 166, with illustrations. Price: 16s. net.

the author's description of the systolic form of the heart and the part played by the various factors in decreasing the size of the ventricles is of great help to the student of both physiology and medicine. Similarly, the facts relative to the important question of the anastomoses of the coronary arteries and the age changes in them are fully described and are of great importance from a clinical point of view. Details of the size of the various heart chambers and valvular orifices, the different abnormalities of the heart and the pericardium are described. The work is copiously illustrated.

To those interested in the study of the heart from whatever angle the monograph should be of the greatest value.

A DIFFICULT PROBLEM.

BOTH in England and Australia, for the past twenty years, all authorities have recognized the supreme importance of educative measures in the campaign for the prevention of venereal disease.

Government departments, voluntary associations and private individuals have prepared and published books and pamphlets and leaflets for this purpose. Consequently it is a little surprising that the author of "Sex and Disease" should deem it necessary to secure an introduction to his work, bidding us face facts frankly (in large letters) and should feel compelled to justify himself for publishing under his own name instead of seeking the protection of a pseudonym. Nothing but encouragement and praise would be given by members of the medical profession to any colleague who on their behalf essays to enlighten the public on the evils of venereal diseases and the methods being advocated and adopted for their prevention. Four things only they ask of such an aspirant to authorship: that he has a definite objective, that he is accurate in his statements, that his English is pure and that his motives are undoubtedly sincere and above reproach. And these requests are justly made because such an author stands as representative of his profession to those sections of the general public whom he addresses.

While there is no doubt as to the interest of the present author in the subject he is discussing, it is unfortunate, for the success of his efforts, that he has not conformed to these four requirements, apparently more from carelessness or want of thought than of set purpose. In calling his work a "scientific contribution containing information for medical practitioners, parents, social workers, teachers, students, chemists, patients and all young men," the author defeats his own purpose by the multiplicity and variety of the audiences he seeks to address. It is becoming increasingly doubtful whether it is wise to include in the same volume instruction to the untutored adolescent in the laws of sex hygiene with instruction in pathology and treatment (preventive and curative) and to one who may contract or has contracted disease from the transgressors of these laws. This difficulty becomes apparent by reading in direct succession the first and tenth chapters of the work under review. It is certain also that the facts and style that would be suitable if addressed to patients, would not be satisfactory if addressed to medical practitioners. For the average layman who desires instruction in sex hygiene or guidance in difficulty, will consider statistics and details of legislation superfluous, while the medical practitioner will demand that such information, if given, is accurate and complete. Unfortunately the author has not everywhere exercised this care and accuracy. Passing by such minor details as the reference to balanitis "and other venereal diseases" (page 39), it is hardly

correct to say that "it is difficult to obtain statistics of notification of venereal disease in New South Wales." They can be obtained, for instance, for this State just as for other States by reference to back numbers of *Health*, although the figures given there certainly differ from those in this work. In the chapter which deals with the prevalence of venereal disease in Australia and in that which outlines the *Venereal Diseases Acts*, there is not a single reference to Queensland, Tasmania or Western Australia, although the last named was earliest in the field and Queensland has pursued a very distinct line of attack. Such facts suggest that the author has not taken the trouble usually considered necessary in preparing a "scientific contribution." What will modern syphilologists say to the statement that "there is no authentic case recorded of reinfection with syphilis after the first attack has been cured"? The book abounds in equally casual statements and assertions without supporting evidence, which must make medical practitioners doubtful about recommending it for use.

More regrettable is the evidence that the author has not sufficiently recognized the great care that must be taken in such a publication to demonstrate beyond doubt that, as he claims in his preface, his "advice and suggestions are offered in a wholly ethical spirit." This statement can hardly be reconciled with the frequent advocacy of a remedy with a trade name, said to have been invented by the author and stated elsewhere in a footnote to be the product of an institution.

If works of this nature really meet a need, we suggest that this should be the first of a series; that a writer should be employed for a monograph on "Digestion and Disease," with an introduction by a medical officer of health interested in dietetics, with figures showing the steady increase in the numbers of deaths from diseases of the digestive tract (these can be readily obtained); with dinky little pictures of Brunner's glands, the bile ducts and other accessories to the intestinal canal, moral advice as to continence in eating, but also (as no one can be expected to be always continent) instructions as to the use of correctives after irregular meals, including quotations from Juvenal as to the use of emetics after feasts and failing all else, advocating instead of alkalinizing powders the use of a powder specially prepared by the author, called "Sinegas," and put up in the Iveapain Institute.

Analytical Department.

"OLEOICAL."

In September, 1925, we published a report on "Tricalcine," a calcium preparation containing 54.1% of calcium estimated as calcium oxide. Our analyst arrived at the conclusion that the calcium existed in the form of calcium carbonate and tribasic calcium orthophosphate. Although it is difficult to explain the beneficial therapeutic action of calcium, the fact remains that many clinicians maintain that excellent results are obtained. There is definite evidence that the calcium in "Tricalcine" is readily absorbed and that it is a reliable preparation when calcium medication is needed. More recently the Products Scientia Laboratory of Paris has introduced a new preparation comprising "Tricalcine," protosalate of iron, cod liver oil and yeast. This combination is put up in the form of granules and of *dragées*. The preparation is neatly dispensed and appears to be uniform and stable. There appears to be a vogue for yeast and vitamin preparations at the present time and in response to the demand very many manufacturing chemists have placed their wares on the market. While it is extremely difficult to determine the actual therapeutic value of a preparation containing calcium, cod liver oil and yeast, it is probable that many practitioners will desire to employ such a combination. We are satisfied that "Oleoical" is a carefully compounded preparation made of pure drugs and that it is true to label.

¹ "Sex and Disease: A Scientific Contribution to Sex Education and the Control of Venereal Disease," by Robert V. Storer, M.R.C.S. (England), L.R.C.P. (London), with an Introduction by Colonel J. S. Purdy, D.S.O., M.D., C.M. (Aberdeen), D.P.H. (Cambridge), F.R.S. (Edinburgh), F.R.S.I., 1929. Sydney: Butterworth and Company (Australia) Limited. Crown 8vo., pp. 131. Price: 7s. 6d. net.

The Medical Journal of Australia

SATURDAY, JANUARY 11, 1930.

A Retrospect.

Medicine.

THE science of medicine embraces an understanding of disease processes and a recognition of the signs and symptoms produced by those processes. It covers a very wide field and makes extensive claims on the powers of observation, of investigation and of inductive reasoning of trained men and women. It must be admitted that in every chapter there are gaps in our knowledge. Some of the problems have been attacked successively from varying points of view in the hope that all the information may be brought to light. But even after all has been sought and examined, it has been found that there are other factors concerned in the process. The aim of the teacher is to be able to tell the story of each disease. This involves the tracing of the cause or causes, the following of the path of infection or the range of the essential changes, the structural, chemical and physical changes in the tissues resulting from the injury, invasion or defect, the secondary spread of the pathological process, the reaction of the body tissues to the abnormal elements peculiar to the disease, the method or mechanism of production of ultimate signs and of symptoms, the processes of arrest of the disease or of the overwhelming of the body by the altered physiological conditions, the mode of repair, the tendency of the body to protect itself against a repetition of the disease and the transmission of the infecting agent, if any, to another individual. There may be other incidents in the story, especially when the process does not depend on an infection. Each year a little more is learned concerning the stories and the clinician is enabled to fill in more of the gaps. It is quite obvious that even in an apparently simple disease the whole story cannot be discovered by one individual. The clinician must

obtain information from the physiologist, the biochemist, the physicist, the bacteriologist, the morbid anatomist and histologist, the pharmacologist, the hygienist, the immunologist and perhaps several other specially trained scientists. It thus follows that when we deal with the subject of pure medicine there is likely to be some overlapping with the special branches of medical study.

The year 1929 has witnessed renewed endeavour to gain a full understanding of several diseases, the most important of which are encephalitis and poliomyelitis, tuberculosis, peptic ulcer, the leuchæmias, pernicious anæmia, scarlet fever and diphtheria. The prevalence of *encephalitis lethargica* in Australia and in England and Wales appears to be diminishing. Sir George Newman in his last annual report calls attention to the rapid decline in the number of notifications since 1925 and to the relative increase in the fatality of the acute disease. He suggests that the mortality may not be as high as the figures indicate, since medical practitioners may neglect to notify the mild infections during the periods between epidemics. In 1928 the case mortality is given as 81.9%. On the other hand, Ziegler finds that the mortality in America as reflected in an average sample works out at 13.2%. It is difficult to reconcile the disparity between these figures. It seems that the prognosis after a severe attack is by no means good. Of those attacked only 15.7% regain their full working capacity in the course of five and a half years, while patients in whom disorders of behaviour or the Parkinsonian syndrome appears, rarely regain normal health. Much work has been done to disclose the virus of this disease, but without success. No clear conception of the mode of infection or of the epidemiology of the affection has yet been gained.

Much fuller information has been gathered in regard to poliomyelitis. Some interesting work has been done on the entrance of the virus, on the path of infection, on the multiplication of the virus in the human tissues, on the production of signs and symptoms and on the immunity reaction. The mechanism determining the primary and main attraction of the virus in the anterior horns of the spinal cord has not yet been elucidated, neither has

the biochemistry of the reaction of the virus in the tissue fluids been determined. Hurst has added data to the store of knowledge concerning the pathological changes produced by the virus in the nervous tissue and cells. Jean Macnamara and F. M. Burnet have contributed valuable information concerning the therapeutic qualities of the serum of persons convalescent from poliomyelitis and have thus thrown light on the production of immune body in the serum of infected persons.

The controversy concerning the *bacille* Calmette-Guérin vaccine has continued in Europe and America and is still undecided. Calmette's results and claims have been severely criticized. Definite tuberculous lesions have been produced by Calmette's strain of *Bacillus tuberculosis* in laboratory animals by some workers. Others have maintained that no immunizing effect has resulted from the use of the vaccine. Two laboratory tests have been subject to considerable exploration by immunologists. The first is the erythrocyte sedimentation test of Westergren. The second is the polymorphonuclear leucocyte count of Arneth. It is widely held that while these tests may not be reliable in diagnosis, they are useful as aids to prognosis. Their repeated application at regular intervals has been adopted in many hospitals and sanatoria. The Tuberculin Committee of the Medical Research Council has been working for some years at the subject of the intradermal tuberculin test in cattle. Buxton and MacNalty have published a special report in 1928 on the subject. The value of the test in veterinary practice may be regarded as established. The place of radiography in the early diagnosis of pulmonary tuberculosis is recognized in all parts of the world. Armand Delille and his collaborators have even maintained that tuberculosis of the tracheo-bronchial glands in children cannot be diagnosed in any other manner.

Fishberg has drawn attention to the relatively benign course of tuberculous lesions of the apex of the lung. He finds that the disease when situated in this region, has a distinct tendency to regress, while a tuberculous lesion starting in the infra-clavicular region tends to spread and to pursue an unfavourable course.

According to the notifications registered in England and Wales and also in Australia the decrease in the incidence of pulmonary tuberculosis is very slow and as far as England and Wales are concerned in the past nine years has remained at practically the same level. There seems to be a slight increase in the number of non-pulmonary tuberculous infections. On the other hand, the mortality from both pulmonary and non-pulmonary tuberculosis has decreased steadily in recent years. It is interesting to note that in England and Wales the number of beds provided for tuberculous subjects by local authorities and by voluntary organizations is as high as 23,260. The importance of the sanatorium and of the isolation hospital as a means of combating the disease has been reviewed by Miller in the United States of America. He has concluded that while many patients do well in sanatoria, climate in itself is not the determining factor in the arrest of the disease. The experience in Europe extending over many years reveals that the tuberculous process is often arrested in its early stages when the environment, regulation of the mode of living and general control as factors in hygiene enable the patient to build up an improved resistance. When Brehmer, Dettweiler and Meissen laid the foundations of open air treatment of tuberculosis they expressed the opinion that altitude and climatic conditions were unimportant; even in the absence of sunshine the breathing of pure air should be regarded as one element in the mechanism of physiological repair.

Some interesting papers have been communicated to the Australasian Medical Congress (British Medical Association), Sydney, 1929, on pulmonary disease in the mining industry and on tuberculosis contacts. The work of K. Moore, of D. G. Robertson and of the Broken Hill Commission may be cited in connexion with the former subject, while Bell Ferguson and Maxwell James have contributed useful information in regard to the latter. The relationship between tuberculosis and industrial hazards has engaged the attention of many workers. It is claimed by investigators in the United States of America that trauma, excessive exertion and the inhalation of dust in industry may predispose to tuberculous infection.

The rôle of the streptococcus in rheumatism and in scarlet fever continues to receive attention. Although this matter is largely a problem in bacteriology, its significance in medicine must not be overlooked, since the causation of disease is the fundamental factor on which all knowledge of disease is based. When the cause is unknown, it is dangerous to draw inferences on observed facts. Thomson, Swift and Hitchcock and Derrick have attacked the problem and have left us with a considerable mass of evidence in favour of the hypothesis that rheumatism is caused by a streptococcus. The finding of the *Streptococcus scarlatinae* in the mucus from the throat of the patient is regarded as diagnostic evidence; the examination of the mucus has recently been employed for the purpose of determining whether or not a child is still infective. The Schultz-Charlton and the Dick tests in scarlet fever have been found to be of value in Australia as elsewhere.

The ætiology of pernicious anæmia and the variations of its clinical and pathological manifestations have been studied in all parts of the world. MacCallum has recorded some interesting observations on the changes in the leucocytes in pernicious anæmia. Mettier has studied the histological changes in the Kupffer cells of the liver and the relation between enlargement of these cells and the deposit of iron pigment in the liver in advanced pernicious anæmia.

Rehfuss and Marcil have demonstrated the value of meat meals in the determination of gastric acidity and have shown that meat is less well digested in chronic gastric ailments. This coincides with clinical experience. Emerson has ascertained that the toxic constituent of bile resides in the bile salts, glycocholate and taurocholate of soda.

K. D. Fairley has published an excellent account of a rare condition known as ochronosis. It is caused by long continued absorption of carbolic acid and occurs in association with alkaptonuria and mælanuria.

Surgery.

As is usual, very much has been written on surgical subjects during the year 1929. Much of this immense literature is concerned with experi-

ence of surgical operations and procedure, the modification of standardized technique, the advantages of surgical as compared with medical treatment and the daring of modern surgeons. There is, nevertheless, much to be recorded in an account of the advances made in surgery during the past twelve months. *The Journal of the College of Surgeons of Australasia* has entered upon the second year of its existence. The articles continue to be of a high standard and to possess considerable didactic value. Reference to original work will be made in connexion with special subjects. The third session of the Australasian Medical Congress (British Medical Association), Sydney, 1929, is distinguished from previous congresses in Australia by the fact that there was a section of anæsthesia. Many of the papers presented indicate that the science and art of inducing anæsthesia are being developed in Australia and that substantial advances have been achieved in recent times. Throughout the world a considerable change of opinion has taken place in regard to the choice of the anæsthetic agent. Up to a very short time ago ether was regarded as the one safe agent and it was administered by the open method of inhalation. Rectal injection of ether and oil has a few adherents, but this method has not found general acceptance. Ether still holds the first place, but ethylene and nitrous oxide and nitrous oxide and oxygen are being used much more freely than in previous years. It is recognized that these gaseous mixtures are valuable in the presence of shock. "Avertin" is also gaining favour and has already secured a definite place in the list of anæsthetic agents. It is employed either alone or in conjunction with local or general anæsthetic drugs. It is held to be of special value in operations for what is known as thyreotoxic goitre. Sodium amytal is being investigated as an anæsthetic agent. At the present time it does not appear to have advantages over "Avertin." Its administration seems to be much more dangerous and it is followed by a prolonged period of unconsciousness and no antidote has yet been discovered.

The treatment of malignant disease is gradually undergoing a remarkable change. Removal by surgical means is giving way to certain chemico-

physical methods, including radium, X rays and diathermy. Carcinoma of the breast has long been treated almost exclusively by deep X ray treatment in Germany. More recently radium treatment without surgical removal has been introduced into general use at Saint Bartholomew's Hospital in London and at some other centres. Sufficient time has not yet elapsed to enable the surgeon to compare the final results with those obtained by surgical removal. What is now known as "surgery of access," a special technical method of treatment, is being evolved. It involves the combination of surgical removal with irradiation.

The treatment of varicose veins and hæmorrhoids by injection of various substances in solution is now firmly established. Coppleston and others in Australia have demonstrated that the results in the treatment of varicose veins are superior to operative and other methods. It is doubtful whether a surgeon is justified at the present time in excising varicose veins under any circumstances. There is no risk of embolism being caused by the injections. A new method of treating *pruritus ani* and of anal fissure has been published by Gabriel in England. It comprises the application of a solution of "Anæsthesin," benzyl alcohol and ether in olive oil. The results in anal fissure seem to be favourable.

Some important advances have been recorded in the surgery of the chest. Phrenicotomy and avulsion of the phrenic nerve are being practised both with and without thoracoplasty for pulmonary tuberculosis. Careful observation has led to the accumulation of much knowledge concerning the modification of respiration after unilateral division of the phrenic nerve and concerning the effect of semi-paralysis of the diaphragm on tuberculous lesions of the lung. The suggestion has been put forward to apply these methods of treatment for empyema. Some progress has been made in the realm of œsophageal surgery, although it must be admitted that the poor blood supply renders the operation of suture of the œsophagus still a hazardous undertaking.

The technique of cranial operations has been extended and improved. The newer methods of

diagnosis, such as ventriculography, are gaining in favour. Attention was directed in this place last year to arterial encephalography. The injection of air into the spinal theca is being investigated.

The tannic acid treatment of burns, an old method, has been revived in recent years and has now become popular. It represents a distinct advance in that it minimizes pain and shock and in consequence reduces the mortality from severe burns.

In the treatment of head injuries the surgeon is becoming increasingly conservative. In abdominal surgery there is nothing new to record. The high mortality after operations for acute intestinal obstruction is disturbing many surgeons and endeavours are being made to find some remedy.

The subject of diverticulitis has attracted much attention in different parts of the world. In Australasia Gordon Bell, Alan Newton, Poate and others have recorded their experience and have attempted to add to the knowledge possessed concerning this condition.

Obstetrics.

The high mortality and morbidity rate among parturient women and the high rate of infant mortality continue to cause uneasiness in all parts of the world. Various proposals have been put forward to improve the state of affairs, but no one remedy has been found to be effective. Henry Jellett attacked the problem in his address as President of the Section of Obstetrics and Gynecology of the Australasian Medical Congress (British Medical Association), Sydney, 1929. He called attention to the relatively low maternal mortality figures in Holland and the Scandinavian countries and to those from the Queen Victoria's Jubilee Institute. On the ground of the experience in the two named countries and the institution he advocated antenatal care by medical practitioners and the management of normal parturition by trained midwives. The latter proposal has not obtained the support of the majority of obstetricians in Australia. In connexion with the same subject the Commonwealth Health Department has arranged with the Ministry of Health of Great Britain for the

visit of Dame Janet Campbell to Australia. Dame Janet Campbell appears to place the first reliance on antenatal supervision and prophylactic treatment; she looks to the medical profession to safeguard the mother's health and to use the midwife to perform her duties under proper control.

H. L. Kesteven claims that with adequate care and scrupulous attention to asepsis the best results can be obtained by the systematic application of forceps when labour has become established. He is prepared to dilate the *os uteri* if after a short period the dilatation has not proceeded far enough to permit the blades of the forceps to be applied. The teachers of orthodox obstetrics have protested against this practice and have stigmatized it as highly dangerous.

Max Hirsch instituted an energetic campaign for the extended use of Cæsarean section as the best treatment for the majority of complications of childbirth. Winter endeavoured to collect the statistics of all the Cæsarean sections performed in Germany. In view of the various indications for this operation we invited members of the medical profession throughout the Commonwealth to fill in a *questionnaire*. The response was disappointing, but it revealed that Cæsarean section is performed by some practitioners for reasons that would not be regarded as tenable by many teachers. It is proposed to publish in the near future some information culled from the replies and to appeal to obstetricians, general practitioners and gynaecologists to place at the disposal of the medical profession their experience, in order that a better gauge of common practice may be gained.

A. Dienst has pointed out that metathrombin appears in the blood and the urine in pregnancy and can be recognized as a coloured body when treated with ninhydrin. He has devised a test which, he states, reveals pregnancy in 92% of pregnant women.

Eclampsia and other so-called toxæmic conditions are being treated more frequently by large bleedings and subsequent transfusion of blood. The advisability of a careful selection of the donor after his blood has been grouped, is emphasized. More

recently the suggestion has been made to return the washed blood corpuscles after bleeding, on the ground that the toxin is contained in the plasma. The effect of injecting washed red blood corpuscles into the veins of an animal after a considerable bleeding has been studied for several years.

Constance D'Arcy has discussed the treatment of *hyperemesis gravidarum* with glucose and "Insulin." She has advocated this treatment after careful trial.

Fischer and Wintz have made a close study of the effect of X rays on the mother's ovaries and on the foetus. Irradiation can be so adjusted that the ripe follicles are destroyed, while the primordial follicles are apparently unaffected. Measured irradiation therefore has been used to induce temporary sterilization. In about half of the women slight vasomotor changes were produced. Fischer is convinced that temporary sterilization is by no means free from risk of damage to the future children. All ova may be destroyed, the primordial follicles may remain unscathed, the primordial follicles may be influenced to some extent so that death occurs before full maturity, the primordial follicles may mature in an apparently normal manner, but the progeny may be malformed. Goldstein and Murphy point out that irradiation of women during pregnancy may lead to microcephalic idiocy and other forms of arrest of mental and physical development.

Some important work has been published in regard to analgesia during labour. Gauss holds that full anæsthesia from chloroform should be limited to short periods immediately preceding birth; ether anæsthesia is contraindicated on account of the bad effect of ether on uterine contractions; other anæsthetics, such as ethyl chloride, ethylene and the like are not quite satisfactory. He has obtained good results from "Pernocton," a derivative of veronal. At times hyoscine may be used in addition. Gauss is satisfied with morphine and scopolamine. Others, however, find the action of the morphine deleterious on the infant. E. Vogt also speaks highly of "Pernocton." Hyoscine without morphine has also found some staunch advocates. Brettingham Moore has contributed a good article on analgesia during labour.

Abstracts from Current Medical Literature.

SURGERY.

Secondary Pulmonary Inflammation.

HACHIRO AKAIWA AND K. ISHIDA (*Surgery, Gynecology and Obstetrics*, August, 1929) have made clinical and experimental studies of pulmonary inflammation following inflammations of the bile ducts and the gall bladder. It is possible to produce pneumonia experimentally following an acute cholecystitis, but the common duct must be ligated and the bacteria virulent. There are two paths from the gall bladder to the lung, directly through the diaphragm into the right lung and indirectly through the circulation into both lungs. Therefore much more right sided pneumonia occurs. The decrease of the diaphragmatic excursions on the right side in patients suffering from biliary affections has no great influence upon the origin of right sided pneumonia. The essential cause of this pneumonia lies in the fact that the bacteria enter the lung tissue from the biliary system, hence this complication is much more frequent when the common duct is obstructed or when the inflammatory process is very acute.

Preoperative Treatment of Exophthalmic Goitre.

J. TATE MASON (*American Journal of Surgery*, February, 1929) gives an account of the immediate preoperative treatment of exophthalmic goitre. The patients are classified into four clinical groups. The first in the early stages of the disease are designated early exophthalmic; in the second stage are patients who came for examination later, designated as acute ascending exophthalmic. In the third stage are patients who have reached the crisis. In the fourth or late exophthalmic stage are those who have passed the crisis and have been ill for several years. There are two classes of patients who require a great deal of care and observation; the first are young girls, usually blondes who develop the disease rapidly; the second are in the forties or beyond and develop the disease rather suddenly. Skin pigmentation is particularly common and the thyroid is small and hard on palpation. In these two groups and in those patients in the crisis the worst examples of exophthalmic goitre are met. The author regards no gain or loss of weight immediately prior to operation as a bad prognostic sign and the immediate preoperative treatment must be such that a gain of at least 0.9 to 4.5 kilograms (two to ten pounds) will take place before operation; in such patients an even and progressive convalescence may be anticipated. An operative preparation which aims at combating some of the

possible causes and increasing the body weight from 1% to 5%, has been adopted; it is designated the ten procedure treatment. This includes rest, the administration of oxygen by ventilation or in extreme cases use of the oxygen tent every day for two hours; application of an ice bag constantly over the precordial region; the drinking of distilled water only in large quantities; a high calorific diet, about 5,000 calories a day, containing a large proportion of sea foods and asparagus, beets, carrots and mushrooms; an intestinal antiseptic in the form of triple sulpho-carbolate, 0.3 gramme (five grains) three times a day; daily colonic irrigation with normal saline solution, iodized salt being used, after expulsion of which the procedure is repeated from four to five times; a "night cap" consisting of honey, biscuits, milk and lactose with sulphonal, 0.6 gramme (ten grains); daily swabbing of the gums with an antiseptic solution of "Acricol" and the administration of Lugol's solution, 30 to 150 drops a day, depending on the metabolic rate. After an experience of treating 150 patients by this method the author states that much better results are obtained and in no case did a severe postoperative toxæmia occur.

Acute Intestinal Obstruction.

LEROY B. SHEERY (*The American Journal of Surgery*, August, 1929) discusses the chief points of acute intestinal obstruction. Intestinal obstruction is of frequent occurrence and the high mortality is procrastination on the part of the surgeon for the sake of diagnosis. In no other condition is the time element of so much value. A great deal of useful information can be gained by paying due regard to the age incidence, for instance in infants intussusception should be thought of first and not enterocolitis. Among the leading symptoms, pain, vomiting and shock are of the very greatest importance. There should be no waiting for distension, absolute constipation, abdominal tenderness, fecal vomiting or visible peristalsis. Every surgeon should teach the necessity of avoiding delay. The situation of the causal lesion and the symptoms may be summed up in the following way. When the obstruction is low in the large gut, pain, cramp-like in character, early and progressive distension and late vomiting are present; shock is absent or of only moderate intensity. When the obstruction is low in the small gut, pain is more acute and is usually centred about the umbilicus, distension is less pronounced, shock is more severe and vomiting occurs earlier. When the obstruction is high in the small gut, pain is agonizing in character, vomiting is earlier and persistent, distension is not present in the earlier stages and shock is intense. The treatment should be quickly instituted. It is essential to empty the distended bowel of its toxic contents. Early operation will obviate this, the most

serious factor. The release of the obstruction is highly desirable. It is necessary to support the patient's system and particularly to build up the chlorides. It is far better to make an abdominal incision and to find nothing than to delay and overlook a condition which can be remedied. It should be emphasized that all patients with acute abdominal pain must have immediate attendance and that an accurate history must be taken. The patient must be examined completely. By watching an abdomen more can often be discovered than by any amount of palpation. General or localized distension and peristalsis must be looked for. Scars must always be sought. Percussion must be carried out. The vomitus will be inspected and it will not be forgotten that uræmia may simulate obstruction. Enemata must not mislead and the taking of a radiographic picture wastes valuable time, if a bismuth meal is given, though examination by screening may be of untold aid.

Cholesterosis of the Gall Bladder.

C. F. W. ILLINGWORTH (*The British Journal of Surgery*, October, 1929) gives the results of a clinical and experimental study of cholesterosis of the gall bladder. There are two types of cholesterosis. Of these the better known is the "strawberry" change, in which the infiltration is widespread. Less common is the type in which localized deposits of cholesterol occur in small polypoidal projections of mucous membrane, cholesterol polypi. These types appear to have no essential distinction and it is common to find them associated. Cholesterosis of the gall bladder, far from being a rare lesion, is actually very common. The essential pathological change is an infiltration of the epithelium and of the stroma of the mucous membrane with lipoids and especially with cholesterol. In the stroma a characteristic feature is the presence of large "foamy" cells of endothelial origin. It is usually associated with cholecystitis, especially of mild degree. Gall stones are frequently present, particularly pure cholesterol stones. It is a condition chiefly of middle life and the incidence bears no relation to sex or social status. Cholecystography indicates that in uncomplicated cases two functions of the gall bladder, concentration of the bile and emptying in response to fats, are not altered. The cholesterol content of the blood is raised in some instances, but is often normal. Symptoms even in uncomplicated cases are extremely varied and the diagnosis is correspondingly difficult. Treatment by cholecystectomy is the most rational procedure and appears to yield satisfactory results. The condition of cholesterosis may be brought about in the rabbit by the association of a prolonged state of cholesterolaemia with a mild chronic bacterial cholecystitis. Cholesterosis does not result simply from a deposit of an excess of cholesterol from the

blood, but is intimately linked up with the function of the gall bladder in regard to cholesterol. The conclusion is drawn that cholesterosis results from two essential primary changes. The first of these is an increase in the cholesterol content of the bile which leads to the absorption of cholesterol into the mucous membrane of the gall bladder. This increase depends upon several factors which are incompletely understood. In some cases it is associated with a similar increase of blood cholesterol. The other essential primary change is a change in the physical and chemical state of the absorbed but invisible cholesterol which renders it optically active and recognizable and which by preventing its transport leads to its accumulation in the gall bladder wall. This change is most frequently due to an inflammation of the gall bladder.

Phrenic Nerve Interruption.

JOHN ALEXANDER (*Surgery, Gynecology and Obstetrics*, September, 1929) gives a detailed description of his technique of the operation for interruption of the phrenic nerve. The operation owing to the proximity of large and important structures, is not without danger. The vagus, long thoracic and sympathetic nerves have been divided in error, the brachial plexus wounded, the thoracic duct torn, the dome of the pleura opened and large arteries and veins wounded. Preliminary medication with morphine without atropine is given. The position adopted is the lateral with a pillow beneath the patient's head; this position makes the approach easier than the dorsal in which the omo-hyoid muscle assumes a higher position and the dissection is deeper. The operation is carried out from behind the patient. The anterior end of the incision is about two to four centimetres above the clavicle and corresponds to the point at which the transverse skin crease, made apparent by flexing the head laterally, crosses the sternomastoid. Local anaesthesia is produced by the injection of ten to fifteen cubic centimetres of 0.5% "Procaine." The skin, superficial fascia, platysma and deep cervical fascia are divided in turn, the external jugular vein being divided if necessary. This exposes a fatty layer which should be infiltrated with more local anaesthetic and blunt dissection should be carried out through this layer. It is wise to remember at this stage that retraction may so flatten and empty an abnormally posteriorly placed internal jugular vein that it may resemble a strip of fascia. Deep to the fat is the rather dense prevertebral fascia immediately covering the scalene muscles, the phrenic nerve and brachial plexus. The brachial plexus is the best guide to the nerve and can be easily recognized. Medial to it is the *scalenus anterior* muscle at the medial border of which can be felt the tips of the transverse processes of the cervical vertebrae. The phrenic nerve may cling to the incised prevertebral

fascia when it is raised and not appear to be on the muscle. The phrenic nerve and the nerve to the subclavius are the only two nerves lying on the *scalenus anterior* and having a mesial inclination. The latter nerve frequently contains phrenic fibres which leave it low in the neck and join the main phrenic trunk in the thorax. Crushing or excising a portion of the main trunk cannot be relied upon to cause total hemidiaphragmatic paralysis. This can be obtained in two ways. The main nerve may be avulsed. If not less than twelve centimetres are removed in this way, it is reasonably certain that the accessory phrenic nerve has been interrupted. The other method is to excise from two to three centimetres of both the main and accessory trunks. A temporary total paralysis may be obtained for three to four months by crushing the main phrenic nerve and crushing or excising a portion of the accessory phrenic nerve. The result should be checked by the fluorescent screen.

Bile Leakage from the Cystic Duct Following Cholecystectomy.

JOHN A. WOLFER (*Surgery, Gynecology and Obstetrics*, October, 1929) has studied the obliteration of the cystic duct stump and the question of bile leakage from the cystic duct following cholecystectomy. Analysis would indicate that there are three possible reasons for drainage after cholecystectomy. They are infection, haemorrhage and bile leakage. For the first and second there can be no question as to the wisdom of providing drainage. Clinical histories indicate that not infrequently after a cholecystectomy bile appears in varying quantities in the upper part of the abdominal cavity. The bile may arise from small tears in the liver, occasionally from small accessory ducts passing directly from the liver to the gall bladder, again from injuries to the main bile ducts and also from the divided cystic duct. The cystic duct stump after cholecystectomy occludes itself by a process of organization of the surrounding exudate which is covered with and protected by adjacent living structures. If the major bile ducts have not been injured at the time of operation or if accessory ducts have not been left open, copious bile leakage after cholecystectomy is due to rupture of the cystic duct at the site of ligation. The cystic duct stump undergoes aseptic necrosis due to deprivation of blood supply. A single ligature, not too tightly tied, is sufficient to prevent leakage. Multiple ligatures are contraindicated and transfixion will not add to the security of the closure. In anticipation of bile leakage, drainage should be freely used only when the duct wall is very friable or extensively changed by pathological processes and should be so placed that it will not interfere with the formation and deposition of the exudate about the duct or prevent the collapse of the surrounding tissues upon the

duct. That drainage is only rarely required is the conclusion based on experimental findings.

The Prevention of Abductor Paralysis in Thyroidectomy.

G. W. CRILE (*Surgery, Gynecology and Obstetrics*, October, 1929) describes the causes of abductor paralysis in thyroidectomy and an operative technique designed to avoid it. It is not the anatomical location of the nerve so much as the vulnerability of its structure, the neighbourhood changes of fixation and adhesions and certain characteristics of nerve conduction which form the hazards. The nerve is particularly vulnerable and must be classed in this respect with the optic, auditory and splanchnic nerves. The slightest direct or even indirect pressure on the nerve interferes with its nerve coordination and immediately changes the voice. The nerve is normally somewhat indifferently secured by ramifications of the cervical fascia; one end is attached to the larynx, whilst the trunk may be attached to the goitre by adhesions and the most common cause of abductor paralysis is the pull on a nerve fixed in this manner, which may occur when the goitre is rolled out. The most disastrous effect is produced when the nerve is disturbed by dislodgement with the finger of an upper pole lying behind the larynx. Such direct pressure and pull on the laryngeal nerve have caused more paralyses than forceps and knife, traction being the most frequent cause. No force must therefore be used in elevating or rolling out the goitre. The technique recommended is as follows. After the skin incision is made, a wide V shaped cut is made between the platysma and skin upwards and downwards to allow a long vertical incision, wide retraction of the pretracheal muscles, division of the thyroideid as far as the trachea and division between forceps of the attachment of the thyroideid to the trachea and larynx, a thin covering of gland being left for protection of these structures. This dissection is carried downwards and slightly outwards until the entire lobe is sufficiently free to be raised gently. It is then freed on its outer aspect and its deeper attachments are divided between forceps and the entire lobe rolled outwards. When the goitre is retrolaryngeal or behind the trachea and when the attachment to the larynx is divided, the posterior portion slides out with ease; in substernal goitre the process resembles the laying of an egg. In fact, it matters little into what recess the goitre has thrust itself, as when the attachment to the larynx is divided, it tends to extract itself. In all cases, the dissection is carried downwards and outwards and until the deep capsule is reached, the dissection is kept within the gland itself, a margin of thyroideid tissue being left behind both for the protection of the nerve during the operation and against later scar formation.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION IN CONJUNCTION WITH THE SECTION OF PÆDIATRICS, THE SECTION OF RADIOLOGY AND THE SECTION OF ORTHOPÆDICS was held at the Royal Alexandra Hospital for Children on July 25, 1929, Dr. F. BROWN CRAIG, the President, in the chair.

Fractures Around the Elbow.

Dr. D. J. GLISSAN read a paper on fractures around the elbow and exhibited some skiagrams (see page 36).

Dr. H. G. HUMPHRIES read a paper on fractures around the elbow and exhibited a number of skiagrams (see page 39).

Dr. W. B. DIGHT demonstrated a number of skiagrams. The first illustrated the forward displacement of the condyle of the humerus. The second was a skiagram of fracture of the elbow with forward displacement of the head of the radius which had not been reduced. The functional result was excellent. In the third skiagram no fracture or other abnormality could be seen at the distance. On closer examination a fine linear fracture could be seen through the ulna. The fourth skiagram depicted a vertical fracture of the upper part of the ulna involving the olecranon. The fifth skiagram illustrated a very rare injury of gross displacement of the olecranon. As a contrast to this he showed a skiagram of fracture of the olecranon without displacement.

Dr. R. B. WADE thought that the readers of the papers and Dr. Dight had adopted a very excellent and interesting manner of presenting their material. Fracture of the elbow was a subject of interest to all practitioners; the reduction was not always easy. He had found that over-extension of the elbow was often very useful in bringing the two fragments into apposition and in overcoming the tendency to overlap. By adopting this expedient and using traction at the same time the best apposition could be obtained. Dr. Wade called attention to the fact that in hospital they saw many patients with difficult fracture after numerous attempts had been made at reduction. He raised the question whether it was wise to make these repeated attempts. He suggested that if the practitioner failed to obtain approximation of the fragments after one or two attempts, he should desist, as there was grave risk of obtaining stiff joints if attempts at reduction by manipulation were made. Dr. Wade found that fractures of the capitellum often did not unite and the fractures of the epitrochlea not infrequently underwent a peculiar form of rotation. The articular surface tended to turn upwards. It was easy to reduce and fix the fragments by sewing the muscle over it, if the surgeon cut down at an early stage.

Dr. Wade had been interested in Dr. Glissan's remarks concerning ischæmic paralysis. He asked whether the signs in the patient number three were those of ischæmic paralysis; he understood from Dr. Glissan that these signs had developed in three days and he suggested that it was more probable that the paralysis was due to pressure on the median nerve. In ischæmic paralysis there was antecedent pressure on the vein and venous block. This led to some fibrosis, but the fibrosis did not appear rapidly. He thought it was more probable that there was involvement of the median nerve than that there was fibrosis or vascular injury. Often an irritated median nerve lesion closely resembled and might be mistaken for an ischæmic paralysis. On the other hand he recognized the significance of interference with the blood supply. There might be gross compression as from a blood clot or there might be acute angulation of the brachial artery. The best way to relieve these conditions was to perform an open operation and to reduce the fracture.

Dr. H. M. CUTLER wished to call attention to the experience of the radiologist in regard to the appearance of elbow fractures. In the presence of a fracture of the head of the radius the fractured surface was vertical,

whereas in fracture of the neck of the radius the fracture was transverse. Displacement was usually in an anterior direction, although there were occasional exceptions to this. He was unable to offer a suitable anatomical explanation.

Dr. W. VICKERS, D.S.O., pleaded for the earliest possible reduction of fractures around the elbow joint. Usually the fracture was quite obvious and if reduction were effected early, complications could be evaded. He always attempted the reduction with anæsthesia and there should be complete relaxation. In his experience it was usually easy to hold the fragments in position after early reduction. He used bandages for this purpose, but disapproved of strapping which was likely to lead to trouble in view of the swelling that resulted.

Dr. Glissan said that he had been interested in Dr. Wade's remarks on ischæmic paralysis. He admitted that his views were not quite orthodox, but he maintained that it was possible for ischæmic paralysis to appear within three days. No doubt in these cases there was some median nerve involvement. He did not treat his fractures around the elbow joint in the extended position. He claimed that if operation were undertaken, there was no necessity and that he got admirable results when he put the limb up in a flexed position. He used a plaster splint with the forearm at right angles to the arm; when the plaster was taken off he had found that the movements permitted did not disunite the fracture. The text book teaching that in dislocation of the head of the radius good function could not be obtained with a false joint was not in accord with his experience. He found that it was not necessary to remove the head of the radius. In spite of the fact that ulnar paralysis was rare, he held that every endeavour should be made to reduce the dislocation and thus remove the possibility of this paralysis developing.

NOMINATIONS AND ELECTIONS.

THE undermentioned has been elected a member of the New South Wales Branch of the British Medical Association:

Magill, William Louis, M.B., B.S., 1927 (Univ. Sydney).
No. 4 Flat, "Des-Den," Old South Head Road,
Rose Bay.

THE undermentioned has been elected a member of the Victorian Branch of the British Medical Association:

Solomon, Norman Josiah, M.B., B.S., 1928 (Univ. Melbourne), Saint Vincent's Hospital, Fitzroy.

Obituary.

ATHELSTAN JOHN HENTON SAW.

DESPITE the fact that Athelstan John Henton Saw virtually retired from medical practice and from his public activities a couple of years ago and found it necessary to exercise extreme care of himself on account of the presence of an aneurysm of the abdominal aorta, the result of a lifting accident, the news of his death on November 28, 1929, spread throughout the whole Commonwealth and left in its trail a feeling of profound regret. He lived the greater part of his useful life in the west, far removed from the two largest cities of Australia and still farther away from the more populous centres of intellectual and cultural enterprise, but he was nevertheless well known, greatly respected and admired and much loved in the east, in the north, in the south. The history of his life, were it written in full detail, without restraint and with strict accuracy, would read like some fairy tale, the record of a man of most remarkable achievement, with almost incredible versatility, with an uncanny influence on young and old, with transparent honesty and

boundless courage, with strength of character and the softest, most lovable nature.

Athelstan John Henton Saw was born in Perth on July 16, 1868. He was the son of the late Henry Saw, a well known merchant of that city. His father died when he was still young. He was sent to the High School in Perth where he gained at the age of eleven years a scholarship of some value. Later he won an exhibition and was thus enabled to complete his education at the University of Cambridge. He went into residence in Trinity College. In 1889 he took the degree of Bachelor of Arts (natural science tripos) and in 1894 that of Master of Arts. In the meantime he entered the medical school and achieved signal success as one of the most brilliant medical students of his year. He took his Bachelor of Medicine degree in 1894. From Cambridge he went to London and was appointed to a house position at Saint Mary's Hospital. The medical schools in London in the early 'nineties of last century were undergoing a rapid and most remarkable transition. The reactionary, conservative spirit of the preceding decade was giving room to a scientific emancipation. The older teachers, brilliant, thorough and erudite though they were, found the changing aspects of the allied science confusing and difficult of acceptance. As the younger men stepped into the places of authority, new doctrines and a wider outlook claimed recognition and altered the prospects of every earnest student. Saw realized the position and took full advantage of his opportunities. In 1895 he returned to Western Australia, versed in modern medicine, a Doctor of Medicine of the University of Cambridge and a Fellow of the Royal College of Surgeons of Edinburgh. Immediately he was appointed to the position of Honorary Surgeon at the Perth Hospital. Although but twenty-seven years of age, he soon established himself in practice in the city and while he was giving admirable services to the hospital as a surgeon, he was earning a reputation as a wise and reliable physician and a first class general practitioner outside the institution. His professional ability soon gained for him the recognition and admiration of his colleagues. During the first ten years he worked day and night, never sparing himself and always thoughtful of the welfare of others. He was universally trusted and universally beloved. In 1904 he was asked to become the medical officer of the Home of the Good Shepherd at Leederville. He accepted the office, but refused all remuneration. He was proud of the honour and privilege of helping the Roman Catholic Sisters in their work of love.

In the year 1899 the Western Australian Branch of the British Medical Association was established and received recognition by the parent Association. From the first Athelstan Saw was a member. As in all other walks of life he soon attained prominence in this sphere. He was elected to the Council in 1900, in 1904 he was elected Honorary Treasurer and in 1906 he acted as President. In 1908 he was chosen as a member of the Medical Board of Western Australia. In 1913 when the Australasian Medical Publishing Company, Limited, was formed for the purpose of creating one Federal medical journal for all the States, Athelstan John Henton Saw was asked to become the Director representing Western Australia. He held this position until ill health compelled him to resign about a year ago. Two years before he had paid a visit to England and the Continent and had profited in many ways by his studies and his observations in the various cities he visited. In 1915 he was elected a member of the Legislative Council of Western Australia, representing the Metropolitan-Suburban Province. As a politician he distinguished himself by his unquestioned honesty and the high ideals that remained unshaken by all the events, the exigencies and the machinations of the party system. He climbed rapidly; on July 28, 1916, he accepted a seat without portfolio in the Wilson Ministry, a little over a year after he had entered Parliament. He commanded the same respect in the House as elsewhere and strangely enough he was held in equally high esteem by members of both political parties. The Wilson Government did not remain long in power and Saw did not again join a ministry. He was a good debater, a clear speaker, always ready and never embarrassed. He enjoyed the confidence of the medical profession and when matters affecting the

profession were under discussion the Western Australian Branch of the British Medical Association realized that it could safely leave everything in his hands. When the *Hospital Bill* was being debated in the House, the Branch adopted a series of resolutions and forwarded them to Athelstan John Henton Saw, with a rider passed without dissent, that the members did not wish anything to be done that would embarrass his position in the House. Everyone knew that the interests of the medical profession and of the public would be zealously guarded by him.

Long before this his colleagues had manifested their confidence in him and had taken advantage of his good nature, his readiness to perform an important service and to do it well. When the Australasian Medical Congress was holding its sixth session in Hobart, Saw was chosen to be the local secretary for Western Australia. He was also elected a Vice-President of the Section of Midwifery and Diseases of Women. He served as the local secretary for the seventh session at Adelaide in 1905, for the eighth session at Melbourne in 1908 and at the ninth session at Sydney in 1911. His task in this connexion was less easy than that of the local secretaries of the eastern States, since Western Australia was actually isolated and its interests and problems were not brought to the notice of the medical profession of Australia through the medical press or in any other way.

In 1910 Athelstan Saw retired from the Council of the Western Australian Branch of the British Medical Association. He was undertaking an ever increasing number of duties and was throwing the whole of his great intellectual influence into an ideal, a dream. The dream came true in 1912 and Athelstan John Henton Saw was appointed a member of the first elected Senate of the University of Western Australia. His interests in higher education and his keenness to raise the standard of secondary education in his native State impelled him to work assiduously for the establishment of the University. The beginnings were modest. Those who know Perth, will remember the cramped temporary structures huddled together on a small plot of ground off St. George's Terrace and will realize that it required vision and courage to call the institution with a complete constitution into existence as long ago as 1912. Saw had sufficient vision and abundant courage and he knew that if the University could be founded with a few faculties, the rest would follow as a natural corollary, the inevitable sequence of events. He laboured incessantly for the wise administration and measured control of the new seat of learning and he took a personal interest and active part in the development of the work and of the teaching. In 1920 they elected him Warden of Convocation and in the early part of 1922 on the retirement of Archbishop Riley he was elected Chancellor of the University. He held this high post until his death. It was in his relations with the University that his fine qualities were best displayed. He was a man of determined opinions, but he was always ready to listen to the views of those who differed from him. More than that, he sought the opinions of others, discussed matters of principle and matters of detail, detected the good points of the other man's argument and declared himself anxious to adopt them. At the Commemoration ceremonies he was the one who could exercise a restraining influence on the over-enthusiastic youths. He exerted a magnetic power on them and a word, a gesture sufficed to restore order and to curb any undue licence.

On the first day of 1916 he offered his services to his country and was given the rank of Honorary Major in the Australian Army Medical Corps Reserve. In August of the same year he was transferred to the Australian Imperial Force and went overseas as Lieutenant-Colonel attached to the Number 14 Australian General Hospital. His service as senior surgeon was distinguished and obtained prompt recognition. He was mentioned in the despatches and in October, 1919, he was created an Officer of the Military Division of the Most Excellent Order of the British Empire. His service was in Egypt and in Palestine.

About the time of his return to Western Australia his activities at the University, in Parliament and at the Perth Public Hospital became so insistent that he found it necessary to give up his general medical practice and

to restrict himself to consultative work. He still carried out his duties at the Home of the Good Shepherd and at the Home of Peace and he still acted as consulting surgeon at the Perth Public Hospital. He was for some years Chief Medical Officer of the Australian Mutual Provident Society in Western Australia. He was also a director of the Perpetual Executors, Trustees and Agency Company.

In 1912 Athelstan John Henton Saw and Mrs. Saw suffered a great grief. They lost their only son, a fine lad of sixteen years, of diabetes. It has been stated in the public press that eventually the bulk of his estate is to pass to the University he loved so well and that the income of the moneys is to be accumulated until a medical faculty has been established. The income of the accumulated capital is then to be devoted to research into the causation, prevention and cure of disease. One of the fellowships that will be founded then, will be known as the Athelstan Saw Medical Research Fellowship, in memory of his boy.

In public and in private life he was one of the best—delightful, humorous, upright, of unusual intellectual ability, tolerant and lovable. Little wonder that there was an outburst of grief, a chorus of sympathy, a unanimous expression of the sense of loss of a dear friend, of a splendid citizen, throughout Western Australia. The sympathy of the medical profession goes out to Mrs. Saw.

REGINALD FRESHNEY.

REGINALD FRESHNEY who died at Toowoomba on September 17, 1929, was born in Melbourne in 1866. He travelled up to Queensland in one of his father's ships when a boy and for several years lived in Maryborough; he was educated at the Maryborough Grammar School. He took the degrees of M.B., Ch.M., at the University of Sydney in 1892 and while a student at Saint Andrew's College.

In 1892 he came to Toowoomba as resident medical officer of the Toowoomba General Hospital. Two years later he went to Brisbane and took up the position of house surgeon to the General Hospital and the Children's Hospital, but returned again in 1895. At the request of the Toowoomba Hospital Committee he became Medical Superintendent, a position which he held for thirty-seven years up till the time of his death.

In his opinion nothing was too good for the sick and his quiet courtesy and ready sympathy endeared him to all with whom he came in touch. The building up of the Toowoomba Hospital from a small beginning to its present very high standard of efficiency is largely due to his untiring efforts and constant study of modern methods.

As health officer to the Toowoomba City Council, Reginald Freshney did much to curb the outbreak and spread of disease and to make Toowoomba one of the healthiest cities in the Commonwealth. Prevention rather than cure was always his aim and many remember his quiet words to the people of Toowoomba which did so much to prevent excitement and panic during the small pox scare, now many years ago, and more recently during the influenza epidemic.

For twenty-five years Reginald Freshney was chairman of the ambulance brigade which was started by Mr. Aland and himself soon after he came to Toowoomba the second time. Under his administration the organization grew from a small one with a hand litter kept in a shed to one of the best equipped and manned ambulance services in the Commonwealth. When he was elected chairman for the twenty-fifth time, the committee presented him with a gold and enamel badge inscribed with the ambulance coat of arms and "for work done." Recently an honour was bestowed on him from England. He knew that he had received it, but was too ill to sign the papers. Sir Percival Wilkinson, R.C.M.G., P.B., Secretary-General of the Priory in the British Realm of the Venerable Order of the Hospital of Saint John of Jerusalem, writes stating that under direction from His Highness the Duke of Connaught and with the authority of the Sovereign Head of the Order, His Majesty the King, Dr. Reginald Freshney,

Chairman of the Toowoomba Centre of the Queensland Ambulance Transport Brigade, has had the honour conferred upon him of an officer in recognition of his life's work.

Under the auspices of the ambulance Reginald Freshney's book of lectures on home nursing is being published and will be used throughout the Queensland Ambulance Transport Brigade as their standard book on that subject.

He was Chairman of Trustees of the Toowoomba Grammar School for eighteen years and always took a great interest in educational matters. At speech days and sports gatherings he was always a prominent figure and when at the celebration of the jubilee of the school a new science laboratory and swimming pool were installed, he had realized only a very small part of his scheme for the advancement and development of the school.

For many years he was President of the Downs Club.

In private practice his skill as anæsthetist will long be remembered.

After coming to Toowoomba he married Florence Carpendale, one of the members of a well known Downs family, but his wife died in 1918. There are four children who are still at school.

CHARLES HERBERT CLATWORTHY.

WE regret to announce the death of Dr. Charles Herbert Clatworthy which occurred at Artarmon, New South Wales, on January 4, 1930.

Medical Prizes.

THE ALVARENGA PRIZE.

THE College of Physicians of Philadelphia, United States of America, announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga and amounting to about three hundred dollars, will be made on July 14, 1930, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

An essay intended for competition may be upon any subject in medicine, but must be accompanied by a written assurance from the author that it has not appeared previously in print either in whole or in part in any form and has not been presented elsewhere in competition for a prize. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. It must be typewritten and in English acceptable for publication without necessity for editing by the Committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the Secretary of the College on or before May 1, 1930.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; and that it may be published by the author with the consent of the College. Other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1929 has been awarded to Dr. George M. Dorrance, Philadelphia, Pa., for his essay entitled: "Congenital Insufficiency of the Palate."

New Year Honours.

HIS MAJESTY THE KING has created Dr. Stanley Seymour Argyle a Knight Commander of the Order of the British Empire. Sir Stanley Argyle has been Chief Secretary and Minister of Public Health in several ministries in

Victoria. He was elected to the Legislative Assembly as member for Toorak in 1920 and has retained his seat since. We offer him the hearty congratulations of the medical profession throughout the Commonwealth.

Dr. Andrew Balfour, Director of the London School of Hygiene and Tropical Medicine, formerly Director of the Wellcome Historical Museum of Medicine, Director-in-Chief of the Wellcome Bureau of Scientific Research and one time Director of the Wellcome Research Laboratories, Gordon College, Khartoum, has been created a Knight Commander of the Order of Saint Michael and Saint George. Sir Andrew Balfour's achievements in tropical medicine, in hygiene and as an organizer have been recognized by the medical profession for many years. He was well known to many Australian members of the medical profession who served in Salonika, in Egypt and in Mesopotamia. He was one of the authors of the "History of the Great War Based on Official Documents—Medical Services" together with Sir W. G. Macpherson, Sir Wilmot P. Herringham and Dr. T. R. Elliott. Few have deserved to be honoured more richly than he.

Correspondence.

THE ÆTIOLOGY OF RODENT ULCER.

SIR: With respect to Dr. Norman Paul's report of cases of rodent ulcer due to trauma, I should like to draw attention to certain points.

First of all it is now well recognized that the effect of trauma as a cause of carcinoma is a very minor one, if it exists at all. This matter was thoroughly discussed by Moran in his article on trauma and cancer in the *Journal of the Cancer Research Committee*, Volume I, No. 1, May, 1929, page 46.

It is also well known that a large proportion of patients suffering from cancer are satisfied when, after search of their memories, they are able to locate or fancy they can remember an injury to the area afflicted. In cases of rodent ulcer of the skin it is commonly asserted by the patient that the lesion began as a result of an injury, but almost invariably on close questioning one obtains the history of a preexisting scaly patch or nodule which the patient regarded as of no importance.

Unfortunately the traumatic theory of causation, except in a small minority of cases, is entirely eliminated by consideration of the established fact that rodent ulcer is much more common in Australia than in England, in the white man than in the coloured man, in the fair than in the dark, in the freckled than in the unfreckled, in the farmer than in the coal miner. Recently Dr. Muir, of Calcutta, forwarded me the result of an inquiry which I asked him to make into the incidence of rodent ulcer in the natives in India. The information which was obtained, was that, except in the scar of burns, epithelioma of the skin, basal and squamous celled, was almost unknown in the natives of India, but that on the other hand it was quite common amongst the whites living in India. As the whites bear a very small proportion to the native population and as their occupation exposes them much less to trauma than the natives who do all labouring tasks, this finding is very damaging to the theory that trauma plays any important part in the production of skin epithelioma.

As for the analysis of cases published by Dr. Paul, it is most unfortunate that it is rendered practically valueless by the absence of any note as to the nature of the complexion, the occupation of the patients and the existence of common effects of sunburn other than keratoses, such as freckling, recurrent reddening instead of browning *et cetera*.

It must also be noted that the proportion of cases with rodent disease showing no accompanying keratoses in Dr. Paul's list, is quite irreconcilable with the result of my own experience and that of other observers. Besides, keratoses are not the only effects of chronic sunburn irritation. In my practice at least, the occurrence of a rodent ulcer without accompanying effects of chronic

sunburn generally, including keratoses, is such a rarity as to immediately cause comment and note of the unusual fact. One would be quite safe in saying that such cases would not exceed 5% of the total.

It must also be pointed out that in the instance of Case I which was demonstrated at the Congress, the existence of the keratoses admitted in the analysis together with other signs of chronic sunburn was pointed out to Dr. Paul at the time, although the case was exhibited as one showing rodent development due to a scratch from a pin. In this case, at least, it is much more probable that the lesion was due to sunburn than to the scratch which may, however, have had an accelerating influence upon the growth of the rodent.

To insist that chronic sunburn was the only cause of rodent disease of the skin would be absurd. There are undoubtedly cases which occur as the result of other influences, but they are rare as compared with those caused by chronic sunburn and as a dark or black skin is no protection from trauma, except as performed by light, it is useless to insist upon trauma as anything more than a doubtful and very rare agent in the causation of rodent disease.

This matter, you will remember, was thoroughly thrashed out by me in a long article on rodent ulcer published in THE MEDICAL JOURNAL OF AUSTRALIA, June 18th, 1927.

In conclusion, if Dr. Paul wishes to prove that trauma is a frequent or important cause of rodent ulcer as compared with chronic sunburn, he must show that the incidence is approximately equal in coloured races and in whites whose occupation exposes them to a similar amount of trauma. If he cannot do this, he must at least offer an hypothesis to explain why trauma produces rodent ulcer in the skin of the white man and not in that of the Hindoo or the negro. Failing in these, logic demands that he abandon trauma as an explanation, except for rare cases of rodent disease.

Yours, etc.,

E. H. MOLESWORTH, M.D.

"Beanbah,"

235, Macquarie Street,
Sydney.

December 10, 1929.

THE INVALID PENSION.

SIR: Among my patients at present are two of some interest.

A.B., aged fifty-seven, has been in receipt of the invalid pension for fifteen years past for silicosis. His children are aged twenty, nineteen, eighteen, nine, seven, six and three. C.D., aged forty-nine, has been also by a coincidence in receipt of the invalid pension for fifteen years for pulmonary tuberculosis. His children are aged twenty-one, nineteen, seventeen, fifteen, eight, six, five and three. Neither patient has worked for over fifteen years and the latter has been bedridden for five years.

What are we doing and where are we heading? Is charity gone stark, staring mad? I hope devoutly that this letter may cause such investigation as should result in the entire reformation of a policy which gives rise to a state of affairs so utterly appalling.

Yours, etc.,

"ALAS AUSTRALIA."

December 13, 1929.

Proceedings of the Australian Medical Boards.

QUEENSLAND.

THE undermentioned have been registered under the provisions of *The Medical Act of 1925*, of Queensland, as duly qualified medical practitioners:

Osborn, Gladstone Rule, M.B., B.S., 1927 (Univ. Melbourne), Commonwealth Health Laboratory, Cairns.

Grahame, Drew John, M.B., B.Ch., 1923 (Univ. Cambridge), M.R.C.S. (England), L.R.C.P. (London), 1922, Brisbane.

TASMANIA.

THE undermentioned has been registered under the provisions of *The Medical Act, 1918*, of Tasmania, as a duly qualified medical practitioner:

Langlands, Kenneth Latham, M.B., B.S., 1926 (Univ. Melbourne), Derby.

Books Received.

THE INTERNAL SECRETIONS OF THE OVARY, by A. S. Parkes, M.A. (Cantab.), Ph.D. (Manch.), D.Sc. (London); 1929. London: Longmans, Green and Company. Demy 8vo., pp. 257, with illustrations.

THE BLOOD PICTURE AND ITS CLINICAL SIGNIFICANCE (INCLUDING TROPICAL DISEASES), by Professor Dr. Victor Schilling; Translated and Edited by R. B. H. Gradwohl, M.D.; 1929. St. Louis: The C. V. Mosby Company. Royal 8vo., pp. 408, with illustrations. Price: \$10.00 net.

Diary for the Month.

JAN. 14.—New South Wales Branch, B.M.A.: Ethics Committee.
JAN. 14.—New South Wales Branch, B.M.A.: Post-Graduate Work Committee.

JAN. 21.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

JAN. 21.—Section of Obstetrics, Queensland Branch, B.M.A.

JAN. 25.—Queensland Branch, B.M.A.: Council.

JAN. 22.—Victorian Branch, B.M.A.: Council.

JAN. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments.

Dr. H. E. Downes has been appointed Acting Chief Quarantine Officer (General), New South Wales.

Dr. Charles Joseph McTeigue (B.M.A.) has been appointed Government Medical Officer at Tullibigeal, New South Wales.

Dr. John Bright Birch (B.M.A.), Dr. Eustace Couper Black (B.M.A.), Dr. Renfrey Gershom Burnard (B.M.A.), Dr. Stewart Roy Hecker (B.M.A.), Dr. Alan Frank Hobbs (B.M.A.), Dr. Henry Edwin Pellew (B.M.A.) and Dr. William Arthur Pryor (B.M.A.) have been appointed Honorary Anaesthetists at the Adelaide Hospital, South Australia.

Dr. Bertram Speakman Hanson has been appointed Medical Officer to the Radium and Deep X Ray Therapy Departments at the Adelaide Hospital, South Australia.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xxii.

ADVALE HOSPITALS BOARD, QUEENSLAND: Medical Officer.
COMMONWEALTH DEPARTMENT OF HEALTH: Medical Officer.
GOVERNMENT HOSPITAL, KALGOORLIE, WESTERN AUSTRALIA: Resident Medical Officer.

ROYAL AIR FORCE MEDICAL SERVICE: Medical Officers.

THE ADELAIDE CHILDREN'S HOSPITAL (INCORPORATED), SOUTH AUSTRALIA: Resident Medical Officers.

WOOROLOO SANATORIUM, WESTERN AUSTRALIA: Junior Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmalm United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Phoenix Mutual Provident Society.
NEW SOUTH WALES: Honorary Secretary, 21, Elizabeth Street, Sydney.	
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Mount Isa Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.